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August 24, 2011

Via Federal Express

Ms. Carol Hulse
Oregon Public Utility Commission
550 Capitol Street, N.E., Suite 215
P.O. Box 2148
Salem OR 97308-2148

Re: In the Matter of PORTLAND GENERAL ELECTRIC COMPANY
2012 Annual Power Cost Update Tariff (Schedule 125)
Docket No. UE 228

Dear Ms. Hulse:

Enclosed please find an original and six (6) copies of the Confidential Surrebuttal Testimony and Exhibits for Donald W. Schoenbeck on behalf of the Industrial Customers of Northwest Utilities in the above-referenced docket. Confidential copies of the testimony and exhibits on yellow paper are being provided to those parties who have signed the Protective Order, Order No. 11-102.

Please also find one (1) CD containing the confidential testimony and exhibits, and three (3) CDs containing the confidential workpapers of Donald W. Schoenbeck. All backup workpapers are also being provided concurrently on CD to Staff and PGE.

Please return one file-stamped copy of the Confidential Surrebuttal Testimony in the self-addressed, stamped envelope provided. Thank you for your assistance, and please do not hesitate to contact our office if you have any questions.

Sincerely yours,

/s/ Jacqueline E. Smith
Jacqueline E. Smith

Enclosures
cc: Service List

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the foregoing Surrebuttal Testimony and Exhibits of Don Schoenbeck on behalf of the Industrial Customers of Northwest Utilities upon the parties, on the service list, by causing the same to be deposited in the U.S. Mail, postage-prepaid, where paper service has not been waived. Confidential copies have been provided to those parties who have signed the Protective Order, Order No. 11-102.

Dated at Portland, Oregon, this 24th day of August, 2011.

/s/Jacqueline E. Smith
Jacqueline E. Smith

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BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 228

In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC	)
	)
2012 Annual Power Cost Update Tariff	)
(Schedule 125)	)
	)

EXHIBIT ICNU/109

DEPOSITION TRANSCRIPT OF DONALD W. SCHOENBECK

ON AUGUST 2, 2011

REDACTED VERSION

August 24, 2011

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 228

In the Matter of

PORTLAND GENERAL ELECTRIC

2012 Annual Power Cost Update Tariff

(Schedule 125)

DEPOSITION OF DONALD W. SCHOENBECK

Volume 1, Pages 1 to 118

Taken on behalf of Portland General Electric

Tuesday, August 2, 2011

BE IT REMEMBERED THAT, the deposition of DONALD W. SCHOENBECK was taken before Heather M. Ingram, Certified Shorthand Reporter for the states of Oregon and Washington, on Tuesday, August 2, 2011, commencing at the hour of 9:18 a.m., the proceedings being reported in the offices of Markowitz, Herbold, Glade & Mehlhaf, 1211 S.W. Fifth Avenue, #3000, Portland, Oregon.

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ALSO PRESENT: Mr. Darrington "Dee" Outama, PGE

EXAMINATION INDEX

EXHIBIT INDEX

DONALD W. SCHOENBECK

was thereupon called as a witness on behalf of Portland General Electric and, after having been duly sworn, was examined and testified as follows:

EXAMINATION

BY MS. KANER:

Q. Can you state your name for the record, please.

A. Donald W. Schoenbeck, S-C-H-O-E-N-B-E-C-K.

Q. And I'm Lisa Kaner, and we just met a couple minutes ago. I represent Portland General Electric.

Do you understand that?

A. Yes, I do.

Q. Okay. And we're here for your deposition that was noticed a few weeks ago.

You're prepared to answer questions about the testimony you submitted; is that correct?

A. Yes, I am.

Q. Okay. I want to look -- and you have a copy of your testimony?

A. Yes, I do.

Q. Excellent. All right. So I want to look at -- I want to talk about your qualifications first.

A. Sure.

Q. So if we could look at Exhibit 101 to your testimony.

MS. DAVISON: Excuse me. I'm sorry to interrupt, but I did want to raise an issue at the beginning of the deposition, and that is a lot of the material that is contained in Mr. Schoenbeck's testimony is marked confidential.

And so we consider it PGE's obligation to note in the record what material you want to have marked confidential and not our obligation. So I just wanted to make sure that's clear that if Mr. Schoenbeck is getting into confidential information, that you need to note that for the record.

MS. KANER: And we appreciate that, and we're going to try to do that. I think we'd like to reserve our right to review the transcript at the end to designate anything that we missed as confidential, if that's okay.

MS. DAVISON: As long as I have an opportunity to review that as well and make sure that we agree that you're not over-designating.

MS. KANER: Absolutely.

Is that okay?

MR. TINGEY: Yeah. If you're looking at a page in your testimony, if you could tell us so we don't miss it, we'd appreciate it.

MS. DAVISON: Most of his testimony is on a yellow page, but there's numbers that are marked confidential.

But, again, I think it's really -- you know, we kind of go through this dance on the confidential material where we pretty broadly designate, and then you do rebuttal testimony and you have, like, two things that are confidential.

And so, you know, I'm not really sure where you're at in terms of reviewing Mr. Schoenbeck's testimony and if you agree that we've appropriately designated things confidential or not.

THE WITNESS: Just to clarify, too, you know, basically we reached a settlement on all issues contained in this testimony, except for the hedging issue.

I'm assuming this deposition focused just on the hedging testimony, and virtually all that we did make confidential because of the general and sensitive nature of the strategies.

MS. KANER: Right.

I agree with everything you just said, and we're going to work to designate, as we go, confidentiality. We just want to reserve the right afterwards to go back and make sure we didn't miss anything.

MS. DAVISON: Sure. That's fine. Thank you.

MS. KANER: All right.

BY MS. KANER: (Continuing)

Q. Mr. Schoenbeck, I'm looking at Exhibit 101. I'm sure you know your educational background better than I do, but I'm going to use this as a guide.

So looking at your qualifications, did any of your degrees, your B.S. in electrical engineering or your Master's in engineering management, did either of those involve hedging strategies?

A. That's a very general question. I guess with respect to the Master's in engineering management, you certainly had courses on finance risk, optimization theory, that would all be applicable towards evaluating the risk a utility would face in procuring energy supplies.

In addition to that, I think generally, of course, the electrical engineering degree is nothing but problem solving, which in a way is what you're doing when you're trying to come up with a power supply portfolio.

So while there might not have been a course called electric or natural gas hedging per se, I think a lot of both the electrical engineering curriculum and finance and optimization theory with respect to energies -- the Master's in energy management are applicable.

Q. I understand they're applicable, and I appreciate that. What I'd really like to know is whether any of your coursework for either of these degrees touched on hedging strategies.

A. Well, again, you're talking something that occurred over 40 years ago. So with respect to the finance, I'd have to go back to my finance book to see exactly what was talked about with respect to risk and portfolio theory to answer your question. I just simply can't answer it today.

Q. So just to rephrase, sitting here today, you're not aware of any coursework that you took for either of your degrees that encompassed hedging strategies?

A. I --

MS. DAVISON: Objection. I believe you have mischaracterized the witness's testimony.

Q. You can go ahead and answer.

A. I agree with that characterization because while I said I did not take a specific course, what I did say is I believe with -- both with respect to the optimization theory courses and the finance courses, there were portions of it that were -- did, in fact, discuss portfolio theory and risk management.

Q. All right. Do you have any formal qualifications in the field of risk management?

A. What do you mean by that?
Q. Well, do you have -- I take it neither of your degrees is a formal degree in risk management.
So have you done any other coursework or have you gotten any other credentials relating to risk management?
A. In the -- in the late '80s, I went to some seminars on -- on gas hedging. I -- I think that was probably about 1986, 1987.
As part of that whole process, I -- I did procure a couple textbooks on hedging that I still have, but they're around the late '80s vintage.
Q. Let's start with the seminars that you attended.
Do you recall who put on those seminars?
A. No, I do not. Like I said, it was the late '80s.
Q. Do you recall the names of those seminars or anyone who spoke at those seminars?
A. No, I do not. I can definitely recall the seminar was in Portland.
Q. Do you recall anything else about the seminar?
A. Oh, yeah, certainly. It was -- it helped me formulate my own approach when I look at a particular issue with respect to hedging, and that is you look at the cost

and the risk, and you try to align them.

In particular, in addition to that, there was the focus on the portfolio theory aspect, which I address in my testimony, that you should not put all your eggs in one basket.

In addition, as part of that seminar, they said you should not hedge 100 percent of your need because you want to leave a little bit of an open position.

All those things came out of that seminar.

Q. And was that hedging seminar that you attended back in the late '80s in Portland, did it address companies that had both -- dealt with both gas and power, electric, or was it just simply focused on gas hedging for gas companies?

A. It -- it is applicable for both, but the main focus was with respect to the natural gas hedging.

Q. So when you say it was applicable to both, did they address both, or was it really just focused on natural gas hedging or --

A. As I recall, virtually all the examples were tailored for natural gas.

But, again, when you're talking about a portfolio theory, open -- how much of an open position, those are applicable to both electric and gas.

Q. Do you think that they're different for electrical and gas when you're looking at their open position?

A. I think there are more risk with respect to electricity than there is gas, as a general principle, so that you have to take that into account in looking at your programmatic hedging.

Q. Okay. So besides the gas hedging seminar in the late '80s that you attended in Portland, any other continuing education on hedging issues?

A. No. The only thing I -- I mentioned was obtaining the books on hedging after the seminar. I -- I looked at those. From time to time, I've gone back and looked at them, but not that frequently.

Q. Do you recall the titles of those books?

A. No, but they're in my office. I can give you them at some future date.

Q. Do you know how many there were?

A. Two.

Q. Two books?

A. I thought I said that.

MS. KANER: We would like the names of those afterwards; if you could provide them, that would be great.

(REQUESTED INFORMATION)

THE WITNESS: That's fine.

MS. DAVISON: It's fine if you want to send a data request.

MR. TINGEY: How long will it take to get the answer?

MS. DAVISON: We'll try to expedite. I'm not sure what his schedule is, but send us a data request and we'll be happy to answer it.

BY MS. KANER: (Continuing)

Q. Maybe I can shortcut this. Is there anybody at the office? If we took a break over the noon hour, could you find out what the names of those two books are?

A. I could call.

Q. That would be great.

Have you been the author of any publication on hedging, either an article or any kind of written publication?

A. I have not.

Q. And have you been the speaker at any conference relating to hedging?

A. No.

Q. How about those same questions: Have you been the author of any publication as to risk management?

A. No.

Q. And have you been the speaker at any conference on risk management?

A. No.

Q. In your employment history -- again, we can look back. You probably know it better than I do. Look back at Exhibit 101. In your professional experience, have you performed any hedging policies or prepared any hedging policies?

A. For individual clients, yes. I'd say yes, I have.

Generally, our practice is primarily representing large energy-intensive users. As part of that process, from time to time, we have been asked to negotiate, on behalf of the industrial user, a procurement strategy for their needs, whether it be electric or gas.

In almost all cases, they've been large industrial customers. There was some assistance with respect to a hospital as well. But in all those, it's -- it's looking at the -- the risk and the cost and trying to align the revenues with the risk and the cost.

Q. And in all of those cases, those were for customers of energy; is that correct?

A. Yes.

Q. Okay.

A. It -- from time to time, we have represented utilities. And, again, it was a while ago, but we did do something with respect to gas, actually, for Portland

General Electric.

Q. For who? I'm sorry. I missed the name.

A. Portland General Electric, PGE.

Q. You did a hedging strategy?

A. Not a hedging strategy, but it was something to do with gas in -- again, it was -- this is probably late '80s, early '90s, potentially in -- what I can recall today, sitting here, is my contact at PGE was Richard Davis.

For the life of me, I can't recall if it had to do with gas supply or gas availability within the Northwest, but it was gas related.

Q. So it was gas related, but you don't think it was hedging?

A. I'm not sure. It was a very modest piece of work. I don't recall what it was.

Q. Do you know what it was used for or if it was used?

A. It may have had to do with one of your very first integrated resource plans. I'm really not sure.

Q. Did it involve deregulated markets?

A. Well, gas was deregulated at that time.

Q. Aside from the work you may have done in the late '80s or early '90s for Richard Davis at PGE relating to gas --

A. Gas, right.
Q. -- and --
A. I'm just -- I'm just trying to...
Q. Right. You're trying to be as broad as possible, and I understand that. Now I want to narrow it down.
Besides that which you've just told us about, was there any other utility company that you performed any work relating to a hedging strategy? And I'm not acknowledging that that work was relating to a hedging strategy, but is there any other work that --
A. Maybe we need a tighter definition of what hedging strategy is.
Q. Why don't you define a hedging strategy for me.
A. In my mind, a hedging strategy includes procuring a supply. It's -- I consider hedging strategies not just to be a financial hedge, but it can be obtaining a physical hedge as well -- or a physical supply as well, for either electricity or gas.
Just to make sure we're clear, I think most people would consider hedging to be both a physical or a financial.
In my case, most of my work has involved more the physical hedging of gas, tying together the costs and

the revenues and the risk that clients face.

Q. Do you understand -- do you have an understanding of what PGE's hedging policy is based on your review of the materials?

A. Yes. They consider -- they consider -- they -- my answer is consistent with their policy, where it can be both the physical and the financial hedge.

Q. And the hedging -- well, the strategies for procuring supply that you've been involved in, did they involve a fixed price?

A. Some of them certainly did. Some are fixed price, some are index price. They vary from terms as short as a month to as long as 20 years depending on the situation.

Q. When you say "as long as 20 years," who was that for?

A. It was for cogeneration development where the cogeneration company wanted to lock in, as best as possible, the margins between their revenues and the cost exposure.

Q. And so what kind of hedging strategy was proposed in order to lock in their future prices for 20 years?

MS. DAVISON: Objection. The question is vague and ambiguous.

Maybe if you can define that better.

Q. Well, I just want to find out what you did for the company that you mentioned that had a strategy out as long as 20 years.

A. There is -- there are RFOs asking for requests for proposals to provide a 20-year supply at a known fixed price.

Q. And was that successful? Was that completed, that strategy?

A. Yes, it was.

Q. And can you tell us the name of the company?

A. This is where it starts getting careful. I -- I -- again, there's always a problem where you have confidentiality agreements with respect to your work.

Given that this is some time ago, I don't feel -- I feel I can tell you the name, but I definitely want this to be confidential to the parties in this room.

MS. KANER: Let's designate this part of the testimony, his answer, as confidential.

(Confidential portion beginning on next page)

PAGES 19 - 20 ARE CONFIDENTIAL AND REDACTED

PURSUANT TO PROTECTIVE ORDER 11-102

BY MS. KANER: (Continuing)

Q. I'm going back to your employment history. Other than what you just described to us -- and I won't name the company because we're not in the confidential mode. Other than that strategy that you just described, any other hedging work that you've done in the --

A. We could -- we -- again, in my view, concerning, as a hedging example, we could sit here today and talk about well over 50, maybe over 70 instances of that type of work over my career. We can talk in terms of Harley Davidson, we can talk in terms of Anheuser Busch, we can talk in terms of Valiant, we can talk in term of Conoco Phillips, Shell, Atlantic Richfield.

I've done strategies, or been part of a team that's implemented hedging strategies, a good portion of my career.

Q. Okay. Can you tell me any other power utilities that are -- electric power utilities that you've done hedging strategies for?

A. Again, I stated, for the most part, I represent the industrial customers with respect to developing a procurement strategy for their operations.

Q. Okay. So I just want to be clear. There isn't a utility company, an electric utility company, that you performed a hedging strategy for; is that right?

A. That's correct.

Q. Okay. Have you been retained to provide guidelines for the purchase of gas or power for a utility company?

A. No, I've not been retained by a utility to provide guidelines for their hedging strategy.

Again, generally, since most of my work is done on behalf of the industrial customers, I generally stay with respect to those as clients.

Q. Okay.

MS. KANER: Let me know if you consider this confidential. I want to ask questions about the appearances that Mr. Schoenbeck has made in dockets.

MS. DAVISON: That's not confidential.

MS. KANER: Okay.

(EXHIBIT No. 1, List of Appearances in Proceedings of D. Schoenbeck, marked.)

BY MS. KANER: (Continuing)

Q. So what you've been handed is the response that ICNU made to data request number 3, which was the list of places in which you have appeared and provided testimony since January 1, 2006.

Is that correct?

A. Yes, it is.

Q. Okay. Did any of these appearances on any of these dockets involve hedging?

A. Yes, they did.

Q. Okay. Can you tell me which ones?

A. I have not gone back and reviewed the testimony, but certainly with respect to one of the PSE dockets. So it -- referencing line numbers, it would either be line 8 or 13. It involved providing testimony on PSE's hedging strategy.

Did you -- was your question just with respect to electric utilities?

Q. No, any of these that involved hedging strategies.

A. There is an aspect with respect to line 10. It was a complaint proceeding where I was representing an energy service provider against an LDC. So it was basically a market power issue on supply.

Again, in my mind, when you talk in terms of providing physical supply for various periods of time, I include that as a hedging strategy, the price -- the price of your supply.

I actually -- in looking at the description, you can see that one actually settled. So I guess the testimony -- generally, in settlements before the commission, the testimony is pretty perfunctory. So there may not be much discussion on the issues that were involved in that case, actually.

Q. And we're still talking about Cascade Natural?

A. Yes, we are.

Q. All right. Any others?

A. I'd have to go back and look at the testimony itself in the Avista Utilities cases, 9 and 15. I'm sure I looked at their hedges during the test period. I'm not sure if I provided testimony on them or not.

That would be the same with respect to line 18 for Avista Utilities. But, again, it's a settlement, so the testimony -- you won't be able to tell from the testimony.

Q. So in each of the cases that you've identified, PSE, Avista and Cascade Natural Gas Corporation, you would have reviewed their hedging strategy and perhaps commented on it?

A. The hedges they performed for the test period, that's correct.

Q. And maybe we're talking past each other. You're saying you reviewed their hedges, not their hedging policy?

A. Washington -- proceedings in Washington are a little bit different than Oregon.

Generally, as a prefiled exhibit, Avista and

PSE will file their current hedging strategy. Their current hedging policy is an exhibit. That's different than in the case of PGE in Oregon where that was not a filed exhibit.

So just as a general rule, in a proceeding in Washington dealing with either PSE or Avista on power supply matters, you see their current hedging policy that they entered into all their transactions with and the transactions, you see both simultaneous.

You actually see the hedging policy in greater detail than you see the transactions because the transactions are buried in more work papers.

Q. So I'm probably getting ahead of myself, but either in your review of PSE's hedging policy or Avista's hedging policy, are either of them using the current hedging policy that you're advocating here?

MS. DAVISON: Objection; compound question.

We've had compound questions throughout the whole morning, really, and I'm concerned about the record. I'm not trying to be difficult, but I keep seeing that Mr. Schoenbeck will answer one part of your "or."

So if you could break it up into two questions, I think we'll have a clearer record.

MS. KANER: I appreciate that.

BY MS. KANER: (Continuing)

Q. Let's start with PSE, since they're first on the list.

In reviewing their strategy that you would have seen in the Washington docket, does PSE use the hedging strategy that you are advocating that is appropriate here?

MS. DAVISON: I object on the basis that it's vague and ambiguous. It hasn't been defined.

A. Well, again, my concern, again, is, you know, having read the hedging strategy in the PSE docket where it's designated as confidential, I precisely know what it is. I could precisely compare it to yours.

The difficulty I would have is what can I reveal by answering your question about their hedging strategy? That's the problem I'm having is the confidentiality issue.

MS. DAVISON: He's bound by a confidentiality agreement with the other utilities.

MS. KANER: I understand.

THE WITNESS: That's the problem we're having. Utilities designate more and more materials confidential. What can you say?

BY MS. KANER: (Continuing)

Q. Let me ask a broader question so that it's not specific to any one company.

Is there a utility company that you're aware of that is using the hedging strategy that you are advocating here?

A. If we talk very broadly about what my hedging strategy is, where it's use smaller percentages the further out you are from the delivery month to getting an ever-increasing position as you go through time, I'd say virtually all utilities do that.

Q. Okay. And you're not saying PGE doesn't do that? If you broadly defined it as broadly as you're defining it, doesn't PGE do that, in fact?

A. That's why I gave examples in exhibits in my testimony, where I gave the example further. Their hedging for 2009 is what I consider much more programmatic. They're in the market every quarter, as contrasted to their hedging for the year 2012, where it's basically all front-end loaded just in the years 2007 and 2008.

So I'd say yes, sometimes they do it; no, sometimes they don't.

Would it help if I refer to the exact pages I was referring to in my exhibits?

Q. Sure. Go ahead.

(Confidential portion beginning on next page)

ENTIRE PAGE IS CONFIDENTIAL AND REDACTED

PURSUANT TO PROTECTIVE ORDER 11-102

Q. Do you consider yourself an expert in hedging strategies?

A. I consider myself an expert in procuring gas and electricity for serving load; certainly with respect to evaluating the risk associated with the different cost structures that either an industry or a utility would face and how your procurement policy should take into consideration the unique situation of a particular industry or utility.

So, in other words, it's not one hedging strategy, you know, fits all circumstances, but you're really trying to lock in your revenues to your costs with the risk you're facing.

Q. Do you consider yourself an expert on gas and -- gas hedging -- I'll try not to make these compound. I'm sorry.

Do you consider yourself an expert on gas hedging with financial hedges as opposed to procurement of a supply?

A. In my mind, there's very little difference. If anything, you could almost assert it's more problematical with physical hedges than financial hedges because with the physical hedge, at the end of the day, you actually have a commodity you have to deal with as opposed to a financial hedge, at the end of the day, you just have a profit or a loss.

Q. So in the case of physical procurement, you still have to deal with other issues such as transportation and how you're going to get the supply to you?

A. And imbalances. No matter how good you are, you can't precisely know, several years out into the future, what your need for the commodity you're procuring will be.

Q. What do you consider the basis of your expertise?

A. In large part, it's experience. It's working with our -- working with individual companies, evaluating the risks they face, how they sell their product, what the major cost drivers are.

Like I said, I've been doing this for a number of different clients for a host of years. When you look at the first time I was involved with procuring an alternative supply of power, it was probably somewhere around 1983, 1984. Since then -- we've looked at hedging strategies ever since then.

Currently, as an example, right now we're dealing with major corporations looking at submittals to RFOs from utilities for power for long-term, five, seven, 12 years. So a critical part of your RFO proposal is, of course, ensuring that it will be -- you will be able to recover all your costs over those periods of time.

So that involves how are you going to -- again, these are gas-fired cogeneration facilities. So how are you going to ensure that over a five- or seven- or 12-year contract it will be profitable? That has exactly to do with hedging.

We've represented over 2,000 megawatts of cogeneration facilities for long periods of time, over 1,400 megawatts of gas-fired facilities for well over 20 years.

We negotiated and executed bilateral contracts over 350 megawatts of gas-fired cogeneration facility; purchased, just in the past year, all those different contracts around -- of approximately five years in term.

A critical element of a gas-fired cogeneration, like I said, is their gas costs. So all that is my experience with respect to hedging.

Q. Would you consider yourself an expert in formulating a hedging policy for an electric utility?

A. I believe whatever the entity is, whether it be electric utility or an industrial customer or a cogeneration facility, they face certain risk, uncertainty. What a hedging strategy is trying to do is limit that risk.

So I think the general policies are applicable in almost every situation. The general policies are you're trying to limit your risk through your procurement strategy.

So the general rules of the portfolio theory -- which is, again, basically, not relying on a supplier or a market -- are applicable in all those situations, including electric utility.

As stated earlier, I've never been hired by an electric utility to formulate a hedging strategy for them, but I think the hedging strategies I've reviewed from electrical utilities are reflective of the points I make in my testimony on what should be looked at in formulating a strategy.

Q. So in answer to my question, which I think it's a yes or no question, do you consider yourself to be an expert on formulating a hedging policy for an electric utility?

A. I -- while I have not done it specifically, I believe the -- the framework I advocate is exactly what's contained in most electric hedging strategies I've observed. So I guess the answer to your question is yes.

Q. Back in 2007, had you been working on forecasting natural gas prices? That might be too specific, but I want to go back at least four to five years.

Had you been working on forecasting gas

prices?

A. We've always looked at forward prices of gas. If you talk in terms of coming up with some supply and demand model to forecast the price of gas, no, I've not done that type of work.

Q. So you'd be relying on other forecasts of -- I'm sorry, other forecasts of gas when you were doing your work four to five years ago?

MS. DAVISON: Objection; vague and ambiguous. I'm not sure what "other" you're referring to.

MS. KANER: I guess I was asking him whether he had forecasted natural gas prices four or five years ago.

BY MS. KANER: (Continuing)

Q. And I believe your answer was no, that you were relying on other sources?

A. What I was saying is, we have not created what I would call a fundamentals model that would forecast the price of gas. That's what I was trying to say by my previous answer.

What we have generally relied upon is either the forward market prices or gas prices that were developed by a client we were working for or a third party.

Q. What third-party sources do you consider to be

credible for forward gas prices?
A. Well, it's a tough -- it's difficult to project forward gas prices because the market is very volatile.
There are people that provide long-term fundamental type forecasts. There are several that provide that type of a service.
Generally, I'm more inclined to use the liquidity that's actually reflected in the forward prices of the gas market instead of a long-term forecast of supply; in other words, yes, people could -- I could give you a list of people that do basically what I call fundamental forecasting, but generally, for the time periods I'm involved with, it's much more reliant on the forward natural gas prices themselves as opposed to a fundamentals approach.
Q. So is there not a credible source that you would rely on for forecasting the price of natural gas?
A. Well, again, so we're not talking past each other, what I hear implicit in your question is a time frame issue.
When you start talking in terms of a long-term forecast of gas, I'm thinking in terms of 15, 20 years. What I'm responding to is, my work, for the most part, does not go out to that time horizon.

So I'm much more willing to -- instead of taking a PIRA or Cambridge Energy forecast or a Navgen forecast and saying, This is their forecast of gas for the next five years, I'm much more interested in saying, What's the market actually telling me? What's the forward market telling me? What are those prices for the next five years, just to make sure we're not talking past each other.

Q. Okay. Thank you.

Do you agree in general that if a market has prior knowledge of a company's trade, then the company might get a less favorable price?

A. Can you say that again?

Q. Yeah. Would you agree with me that if the market has prior knowledge of a company's trade --

A. How do you define market? Let's stop there.

Q. Well, how do you define market?

A. We need the market and the time frame. You know, basically, when you talk in terms of hedging, let's be more specific with respect to hedging for the next five years, next four years, next six years.

Generally, what you're talking in terms of is doing a bilateral contract with someone willing to enter into that transaction with you.

The further out you go, there are generally less entities willing to enter into that contract. So the further out you go, there's less liquidity in that bilateral market.

Q. And I guess my question is, if the market knew that a company was about to trade or was looking for a specific trade --

A. So you're saying every one of these bilateral counterparties was aware of what your needs were?

I guess there would be some kind of an issue there. But in actuality, the natural gas market is relatively competitive. When you -- when you do an RFO for a supply, the prices are generally tight, certainly in the near range. As you go out further and further again, you get this liquidity issue, and that spread becomes wider.

But in the near term, it may -- it -- that's what's difficult about answering your question because of the time horizon. We need a more definite time horizon, I guess.

Certainly, if you go out beyond four or five years, there are fewer people you can enter in a transaction with, and there may be a wider range of market prices.

So to the extent you've hypothesized that there's this -- they know your needs and if you have nowhere else to go, yes, they may have some kind of market power over you, but it's hard to envision that occurring.

Q. How about a three- to five-year horizon?

A. Again, you're getting into a much more competitive arena. Once you get below four, once you get below three, you're having more and more conflicts because there's less -- you're into collateral risk is what's going on. That's part of it.

And so you'd have even less impact at that point because now -- now -- because you're going from, say, a limited number, maybe 10 counterparties, to maybe 30 or 40 parties you could counteract, that you could enter into a transaction with.

So somehow, if you think it truly is a competitive market, it -- I'm just struggling with it, that you'd get a -- this -- somehow this benefit from it.

Q. Well, you mentioned something about collateral risk.

Can you describe to me what the collateral risks are depending how far out you go?

A. It's concern over defaults. It's what you've -- if you go back prior to the energy crisis, if you were negotiating a contract for either gas and/or power, there was -- there was little forethought given to credit risk or collateral risk.

Post the energy crisis, it's now a major consideration. So if you execute a contract today, there could very well be some sort of mark-to-market adjustment on the credit and collateral that you have to post on a monthly basis because the market is much more concerned now about default.

That in and of itself has created -- some parties, because of that type of risk, will not enter into long-term supply contracts anymore or at a huge premium.

Q. And have you looked at those collateral risks in the hedging strategy that you formulated in your testimony?

A. I did not look at -- at PGE's credit and collateral obligations under the hedges they entered into.

Q. But did you consider the collateral risks in the hedging strategy that you are --

A. Yes, and that's in part why you -- it's one of the factors why I suggested the limited number of years, because, again, what happens the further out you go, your credit and collateral risk costs become greater. Your counterparties become less. The market becomes less liquid.

So all those things were -- I considered, basically, in my recommendation.

Q. Okay. Would you agree with me that the primary goal of hedging is to reduce price volatility?

A. I'd say it's certainly a major goal.

Q. Can you --

A. And, again, in my mind, one that's just as important is the connection between revenues and risk -- or revenues and cost. I'm sorry. I think that's an important aspect as well.

Q. Okay. So can you -- maybe you could tell me what you considered to be the goals of a hedging strategy.

A. That --

Q. We've agreed on price volatility as one.

A. Right.

Q. And then you also said --

A. Trying to link revenues and cost. I'd say those are the two major ones.

I think in my testimony, I may have had a third with respect to, you know, the portfolio theory aspect of hedging strategy as well.

So, again, it all gets wrapped into the number of suppliers you have and not using just a simple market, particularly in the case of electric utility.

Q. Explain the port -- how the portfolio theory is a goal.

A. It's something that should be taken into consideration because the -- the portfolio -- examples of the portfolio theory, again, if you just use the bilateral market, a long-term bilateral market, that would be fine.

But my recommendation is that should not be done for 100 percent because of the notion of the fewer counterparties and not knowing your risk of what your actual needs will be that far out into the future.

So you can rely on an over-the-counter bilateral trade for some aspect, but you can also rely more on prompt month, short-term transactions to fill in because of the uncertainty.

That's the risk aspect of not knowing what your needs are four years out into the future, five years out into the future, six years out into the future.

Q. So do you agree that as you're formulating this hedging strategy, that you need to reassess your resource needs as you go forward?

A. Yes.

Q. And that would be a continual process?

A. Yes.

Q. And how often do you think you need to reassess those resource needs?

A. I'd say it's all particular to the particular industry. You know, for an electric utility, you know, certainly they're looking at changes in what they may be facing more closer to the actual time of delivery than further out; in other words, their risk with respect to loads and resources, that pretty much will be on some sort of a normalized basis.

But near the term, there will be more volatility with respect to changes in maintenance schedules, changes in temperature, changes in hydro conditions in the Northwest. All of those are -- could have a dramatic impact on your gas needs within the prompt year.

Q. I want to better -- I want to understand what you mean by prompt year.

A. The current 12 months out.

Q. Okay.

A. From today to the next 12 months. Prompt month -- we're basically in August right now. So you'd consider the prompt month maybe September. So September to the next August, that would be the prompt year.

Q. Okay. So a utility such as PGE should continually be reassessing its resource needs in executing its hedging strategy; is that accurate?

A. Yes. Basically, you're looking at the open position, what you need with respect to the -- your best -- currently best available information at that time to determine what's needed to serve your load for the next day, the next week to the next month, the next year.

Q. And it should go beyond a year, right? I mean, I -- a utility's hedging strategy should probably be reassessed annually, at least, as they go forward?

A. We may be miscommunicating here. What I've been talking about is basically executing the hedging strategy. And certainly with respect -- so that's the more frequency. I was talking in terms of the day, a week, a year.

With respect to reviewing your hedging policy itself, if that's what your questions were really directed at, certainly, it doesn't have to be done on a daily basis. But that still should be done -- I would say it would not hurt to do it quarterly, four times a year, to actually -- certainly once a year for sure. I mean, I suspect almost every utility does it at least once a year, review their hedging strategy.

Q. And how about reassessing its resource needs as part of the hedging strategy?

A. Then we're talking in terms of implementing it. In my mind, implementing the hedging strategy, you're doing that virtually on a daily basis. When you're looking at what's your open position and what have you already contracted for, what are your needs, what are -- what are your needs versus what you have available to you, that's more of an operational thing.

Q. Okay. Would you agree that hedges are entered into in order to, in advance, limit the range of potential future costs?

A. It can do that, certainly.

Q. Okay. And --

A. You know, think in terms of, you can lock in for a given forecast. You can -- through hedging, you can lock in your entire costs. So you can go from an uncertainty of having a totally open position to having a totally closed position where you've prepurchased all your needs for a given period.

So, yes, definitely can decrease your risk, decrease your cost exposure.

Q. Okay. And --

A. It can become known and virtually certain.

Q. And I think you mentioned earlier the volatility of gas. I just want to talk about that.

Would you say that recent gas has been -- there have been unexpected downward trends in gas?

MS. DAVISON: Objection; vague and ambiguous. You haven't defined recent.

MS. KANER: Okay.

BY MS. KANER: (Continuing)

Q. Let me ask a more open-ended question. In the last 10 years, how would you describe the volatility of gas prices?

A. They've gone up, and they've gone down.

Q. Okay. And would you say, looking back five years ago, that the projections in general were that gas prices were going to increase in the next five years?

A. Generally, whenever you look at a projection of gas prices, it's kind of a hockey stick curve, where any long-term forecast of gas prices, as they go down, always trend upward. It -- that's always the way it is. Wherever you currently are today, there's generally a forecast that goes upward.

Obviously, the more -- if you -- did you say 10 years or five? What did you finally settle on?

Q. Well, I was saying five years ago, would you agree that the projections were that gas prices were going to increase?

A. 2007, yes; just like I say, in most cases, most years, if you're talking about gas trends for the long-term, they would generally virtually always increase over the long-term, again, if you're going out 10, 15, 20 years.

Q. And so if you look at where gas prices have actually been in the last five years, would you agree with me that the downward trend of gas prices has been unexpected?

A. There's always the timing issue. You know, it's supply and demand. So this -- this really goes to the heart of my view that you truly can't beat the market and why you should use programmatic hedging as opposed to hedging all the gas at a particular time.

So in general, I'd say a radical movement upward or a radical movement downward, being several dollars per BTU, you could say is unexpected.

Now, having said that, there are -- again, there are certainly shifts. You know, what was it, back in 2005, if you have a world-class hurricane season, that's going to be a dramatic shift. If, you know, 2008, '9, you start developing shale gas, that's a dramatic shift.

So, yes, there are things that impact supply and demand of gas that can go either way.

Q. As long as we're talking about historic prices, and you've named a couple that have shifted the market, sort of a fundamental shift, where you have a hurricane season that was incredibly difficult or other events, I want to talk about some of those with you.

So back in 2000 to 2001, would you agree with me that the power crisis was sort of a fundamental shift in the gas prices or caused a fundamental shift in the market?

MS. DAVISON: Objection; ambiguous. I'm not sure which market, electric or gas, you're talking about.

MS. KANER: I'm just talking about gas. Thank you.

MS. DAVISON: Thank you.

THE WITNESS: I'd say about the 2000, 2001 crisis, there was a fundamental shift in the electric market that the gas market tried to capture some of the economic brunt that was occurring. There was a run-up in electricity prices, and the gas market responded by running up their prices as well.

So in that instance, I'd say the electric market pretty much drove the gas market in that crisis.

BY MS. KANER: (Continuing)

Q. Is there a correlation, then, between electric prices and gas prices?

A. Generally there is because within this portion of the country, gas is on the margin a great deal of the time.

I haven't looked at a recent study, but there was a FERC study a few years ago that said gas was on the margin approximately 80 percent of the time in the WCC.

So given that gas is driven -- or given that gas drives electricity prices as the incremental resource, it does have a significant impact within the WCC market.

Q. Okay. And then there was another push of gas when the hurricane season hit with both Katrina and Rita;

is that accurate?

A. Yes.

Q. Okay. And then following that crisis, gas prices abated somewhat?

A. Yes.

Q. And then there was sort of a global economic expansion with an increased demand that led to higher prices.

Is that somewhat accurate? Now I'm sort of into the 2007 to --

A. 2007, yes, that's -- that's true. And, again, you know, with this, it's all -- with the supply and demand, the higher prices created greater supply, you know, following that period. So the market's responding on all these events.

Q. And then --

A. You know, Katrina -- Rita and Katrina created a market shortage, obviously, of gas supply. So there's a market response. Looking in -- in the economics of 2007, there's been a market response. So, yes, it's -- it's an ongoing market.

Q. And then with the availability of gas through shale fracking, there's been yet another shift in the market as a result of expanded supply.

Is that accurate?

A. That's accurate.

Q. So in formulating a hedging strategy, do you believe that it's appropriate to evaluate each of those market shifts as you go along to determine how liquid the market is?

A. What are the market implications? Certainly all those things should be considered in evaluating your hedging strategy.

Q. And do you think that they should be evaluated in the execution of your hedging strategy?

A. In my mind, the evaluation of them would affect the parameters you would set for your hedging strategy so that, yes, having set those parameters based on those factors, then it's the execution of the hedging strategy.

Q. So I want to understand how those factors relate to the programmatic approach that you've described.

So my question is, given that there are some fundamental shifts that occur in the market, are those times when your programmatic approach would have to be adjusted in order to not necessarily purchase at a time when there's a crisis such as created by the hurricane season of Katrina and Rita?

A. That would be one factor. You'd also have to look at your total need, your total open position at the time.

I'd certainly say, yes, you would consider those in developing your hedging strategy and executing your hedging strategy.

MS. DAVISON: Are we at a good point where we can take a break?

MS. KANER: Sure.

(Pause in proceedings: 10:23-10:42 a.m.)

BY MS. KANER: (Continuing)

Q. We're back on the record. We were talking about historic events that have affected gas prices, and I wanted to ask you about one other historic event, and that would be the financial crisis that started in late 2008, going into 2009.

Did that affect gas pricing?

A. Can you be more specific on the exact time period? I guess I'm not recalling anything at the moment exactly with the gas price movement.

Q. Well, the financial crisis that sort of started with the -- I would say with the Stock Market crashing in September of 2008, if I have my dates right, moving into what was considered to be a recession.

A. Uh-huh.

Q. Did that affect gas prices?

A. What I'm trying to do is separate the market. I'm -- I'm finding it hard to answer the question because of separating the implications as the supply from shale gas was coming with respect to the financial as well.

That's why I, sitting here today, can't really say how much of the movement may have been attributable to which of those two factors during that time period because they're both occurring kind of simultaneously.

Certainly with respect to just in general, to the extent there's more supply, less demand, that would generally affect gas prices and depress them.

Q. Okay. And so if I understand what you just testified to, the combination of both the recession that would have reduced demand, and the shale increase in supply both --

A. Looking at the potential availability of shale, shale supply.

Q. And does that increase the liquidity or decrease the liquidity of the market?

A. The -- potentially a financial crisis affecting -- again, let's define market again.

Q. All right.

A. If we're defining market as the number of bilateral parties, it's bilateral parties you're entering into a long-term contract with -- because, again, you need to talk long-term versus short-term -- the financial crisis may have resulted in fewer counterparties being available for a long-term transaction.

If you're talking more in terms of a short-term market, the greater abundance of supply would have made the near-term market potentially more liquid.

So, again, there's kind of competing factors depending upon the time frame you want to put behind the word "market."

Q. Okay. And the financial crisis that would have affected the long-term ability of counterparties, was that because there was a credit crunch essentially?

A. It, again, comes down to credit and collateral. As I stated earlier, credit and collateral has become a major issue on longer-term transactions.

Q. Do you believe it's appropriate to use after-the-fact outcomes to test whether a hedging policy was prudent or not?

A. To do a back cast?

Q. Yes.

A. I think you could always learn from doing a back cast.

I don't necessarily -- wouldn't use the words "to determine if it was prudent or not" because that should be based more on what was known at the time you developed the hedging strategy.

You can certainly learn from doing a back cast.

Q. So in judging whether a hedging policy is prudent, you think it's appropriate to look at what was known at the time of the hedging policy to decide whether or not it was prudent at that time as opposed to looking back?

A. Yes.

Q. Okay. So given that, you'd agree that even if purchases were made that were -- that are now out of the money at the time, that those purchases don't necessarily reflect whether or not the policy at the time was prudent or not?

A. Yes, that's correct. The main -- the main criteria should have been the policy that was developed and then the execution of that policy.

Q. And based on what was known at the time of both the making of the policy and the execution?

A. And the execution.

Q. Okay. So we talked a little bit about liquidity. I want to focus on that for a minute.

Do you agree that liquidity is the measure of the volume of transactions in the marketplace at the time?

A. If you're talking, again, short-term, I guess

I -- liquidity can also be couched in terms of the number of counterparties you can enter into a transaction with.

Q. Okay.

A. And so if you're talking in short-term, sure. Using a volumetric measure of market liquidity, you can look at the forward monthly trades for the next quarter, and you'll see -- versus the next 12 months out, and you'll see the market is much more liquid.

There are many, many more transactions, many, many more volumes occurring for the prompt month, prompt quarter, than there is the prompt year.

Once you start talking in terms of longer periods of time, then you're really talking much more the bilateral market. When you're talking entities that can enter into three- or four- or five- or six-year contracts, then the -- I would -- I would think more the term liquidity, in my mind, more goes to the number of counterparties you could execute a deal with than the volume.

Q. And as that liquidity reduces, as the number of counterparties is reduced over time, does that affect the price?

A. I think it's what I said earlier: There's -- there's -- there's -- generally, because of the risk, the longer-term risks, there is more -- there's certainly a greater cost associated with credit and collateral generally than executing contracts at that point in time.

And then you start having to look, then, at connecting the cost you're incurring in the risk you're facing and what's the certainty.

The further out you go, there's greater uncertainty, so there should be less supply entered into on a long-term contractual basis.

Q. Okay. So if I understand your testimony it's that in executing on a hedging strategy, it's appropriate to evaluate the liquidity of the market for the hedging products that you're looking to purchase in whether or not you decide to execute on a particular hedge.

Is that accurate?

A. Or determining the policy. I'm saying it also goes to the policy.

If -- if -- if you're -- let's consider -- you're considering a policy, should I hedge three years out? Four years out? Five years out?

I'm saying one of the things you should look at is how many counterparties are there that would be willing to enter into a three-year contract versus a four- or five-year contract.

I'm -- I'm saying that number goes down. The further out you go, there are fewer counterparties; because you're talking heavyweights in the financial industry, there are fewer entities that will sign long-term contracts, and that should be taken into consideration in formulating your hedging policy and maybe say, I should not go out five years. I should not go out six years, because there's also this credit and collateral cost associated with that as well.

So your expenses are going up. The risk -- the risk you're facing, you have less certainty about those risks. So that's why, in my view, for the electric utility industry, an appropriate period is pretty much the 48 prompt months.

Q. So we're talking about liquidity and the number of counterparties reducing as the years go out.

Is the number of counterparties in a bilateral market also dependent on whether or not a party is willing to post collateral?

A. There are -- there are -- there's master agreements that are worked out with respect to the bilateral entities entering into what I'll call long-term transactions. Let's call a long-term transaction anything greater than -- let's just call it three years for now, three, four, five years. Those are generally worked out in advance of the execution of the transactions under those agreements.

So those are generally specific to the two parties entering into them. So there's -- there's basically a known credit and collateral obligation under these agreements.

Q. So if -- and do you -- are you familiar with the term enabling agreements?

A. Uh-huh.

Q. Would you call those master agreements enabling agreements?

A. Yeah, potentially. Let's be careful about a master agreement because there are appendices to it. Generally there is a credit and collateral appendices or appendix.

Q. Right. So it's an agreement that allows you to do business with that party, should you choose, because you've already worked out things like the collateral?

A. Uh-huh. And there are generally limits to the master agreement as well, and they're generally specified as a term. The agreements are the obligation under which the specific transaction falls under, what has to be approved or who gets to approve it.

So there are general parameters such that two parties can work quickly to facilitate or execute a transaction.

Q. So generally, would a company that has those kinds of master agreements or enabling agreements in place have a larger market to work with than a company that didn't have those agreements in place?

A. (No response).

Q. Maybe what I should say is access to more counterparties because they have those agreements in place.

A. Well, again, we -- yeah. Market -- market is always a very broad term.

So if, again, we're using the market to be long-term arrangements, in excess of three years, the more master agreements you've executed with a greater number of counterparties, that would be good, versus entering into all your long-term transactions with just a single counterparty.

You have more opportunities to get more competitive bids for whatever period of time you're looking at to the extent you have potentially 10 enabling agreements that you could ask for trades or execution -- execute transactions with 10 different counterparties than one.

Q. So can we agree that a company that's unwilling to enter into one of those master agreements or unwilling to enter into an agreement in which they be required to post collateral in those later years, three, four, five years out, that they would have a more limited market or a more limited number of counterparties that they can deal with?

A. Yes. The way I would look at it, potentially, is they would go to shorter-term transactions or to more the liquid market because, again, you know, if you -- if we've defined market as this three- to five-year period, three- to six-year period, yes.

Q. Okay. And I think we've already agreed that if the market is illiquid in that period of time, that three- to five-year range, and there are very few, if any, counterparties that a company can do business with, that that is something that the company should evaluate in determining whether or not it should enter into a hedge during that period of time; is that right?

A. I agree with that.

Q. Okay. And would you agree that it would not be prudent -- well, let me change that.

Would you agree that it would be prudent for a utility that's attempting to hedge a price volatility risk to avoid taking a substantial position when the market is illiquid, as we've just defined it?

MS. DAVISON: I object on the basis that it's vague and ambiguous. I don't think there's enough facts in the question to evaluate the legal concept of prudence.

Q. Can you answer that?

A. Can you try rephrasing the question?

Q. Well, do you agree -- let's take prudence out of it.

Let's just say, do you agree that a utility that's attempting to hedge against a price volatility risk should avoid taking a substantial position in a hedging instrument when the market is illiquid?

A. And, of course, the natural answer to that would be yes. But, again, you have a definitional problem. How are you defining illiquid? Illiquid is -- it's in the -- in the mind of the beholder.

I may consider it an illiquid market if there's less than 10 traders. Someone else may say, No, it's still a liquid market unless there's just one or two traders -- one or two counterparties. Excuse me.

So, again, there's -- "market" is a vague word, "liquid" and "illiquid" are vague words. You need to be more specific.

But as a general principle, sure, you should not put all your eggs in an illiquid basket.

Q. Okay. Has the liquidity of gas changed in the Northwest over the last five years?

A. So, again, what --

Q. Let's talk about hedging, gas hedging instruments.

Has the liquidity of gas hedging instruments in the Pacific Northwest changed in the last five years?

MS. DAVISON: Objection. It's vague and ambiguous. You haven't defined the time period that -- you've said the last five years, but --

MS. KANER: From 2006 to the present. Does that help?

MS. DAVISON: No. In terms of, are you talking about purchases three years out, five years out, or --

MS. KANER: I see.

THE WITNESS: Market definition is the problem.

BY MS. KANER: (Continuing)

Q. First let's talk about -- well, let's -- can we talk about one to five years out, or should we talk about three to five years out?

A. (No response).

Q. Let's eliminate short-term. Let's talk about the three to five years out, the midterm as I like to call it.

A. I have -- I have not done analysis looking at the counterparties that were available to enter into a three- to five-year transaction today versus five days ago.

But I'd say -- five years ago. Did I say five days?

Q. Yes, you said five days ago.

A. Five years ago.

But in -- I would say, in general, I'm seeing about the same counterparties from having reviewed transactions from five years ago versus now, seeing multiple counterparties, a lot of the same names, in other words.

Q. So do you think that the liquidity of the market for gas hedging in the last five years has changed? And we're talking about the market for three to five year out hedging instruments.

A. I don't believe so.

Q. Are you familiar with the specific costs associated with financial hedging for fixed -- for float costs, either for power or gas?

A. Are you talking about a fixed price versus an indexed price transaction, you know, a fixed floating swap?

Q. Yes, yeah, that is what I'm talking about.

A. Yes.

Q. And what costs are associated with those types of instruments?

A. Generally, a relatively modest -- again, you have to talk in terms of the term. But if you're certainly calling for a near term, short-term basis, it's generally a modest administrative charge.

What happens on the longer-term basis, because of the costs of the credit and collateral, under some of those agreements, what utilities have to process can be in the range of -- you know, in the range of a million dollars or more.

So, again, the critical -- what we've talked about, credit and collateral and even transactional costs, which I'm including to the extent you have to have a credit and collateral instrument out there, there's a cost associated with that. It can be small or large, depending on the time frame.

Q. And if we're talking about that midrange --

A. If we're talking, you know, three to five years, I'd again say, that's -- you're going to have some sort of a credit or collateral cost associated with that, as well as any sort of administrative costs associated with the transaction. I would lump that into it and say that's the cost of the transaction.

Q. And the magnitude of that cost would be?

A. For a utility, I would certainly think for their entire program, it would be in the range of a million dollars or more because of the -- because of having the credit and collateral posting costs associated with it.

Q. Are there other fees besides the collateral and posting costs?

A. There generally can be a transaction or modest administrative fee depending upon the arrangement. I mean, even to the extent you're doing it over the market, you know, in a short-term market, there is a fee for entering that transaction, but those are generally very modest.

Q. There could be brokerage fees?

A. That's what I'm talking about, market fee, brokerage fee, that type of thing.

Q. Okay. Do you believe that those transaction costs should be considered in executing the hedging portfolio of a company?

A. I'm sorry. In executing a transaction, you mean?

Q. Yeah. Do you believe those transaction costs should be considered in assessing the type of hedging that a utility should enter into?

A. You can certainly take it into account, sure. Again, what you'd expect is to the extent you're entering into longer-term transactions, those costs would go up, and that would be another thing to consider on why it may not be prudent or reasonable to enter into those longer-term transactions because of the transaction costs associated with them.

Q. Okay. Do you know the amount of collateral that PGE has been required to post in the past two to three years relating to hedging transactions?

A. No. I believe I said I haven't looked at any of the master agreements they have with counterparties, so I don't know the terms of the credit and collateral they must post.

Q. Okay. You had said that you had a couple books about hedging on your shelf?

A. Uh-huh.

Q. Is one of them Options, Futures & Other Derivatives by John C. Hall?

A. I don't know.

Q. All right. We'll wait until we have a break and you can check that.

Do you agree that the market risks associated with a hedging policy for a natural gas company could be different than that for an electric company?

A. Do I agree the policy could be different?

Q. No, that the market risks that they're faced with could be different.

A. I thought I stated earlier that I believe an electric utility in general faces more risk than a natural gas utility.

For a natural gas utility, the primary risks they face for a local distribution company is temperature related, weather related, not being able to know the load. It's uncertain from one day to the next.

For an electric utility, you obviously have that uncertainty associated with weather, temperature. In addition to that, you have supply uncertainties around the amount of hydro that's in the Northwest, the forced outage of units. Those are at least two other things that generally don't face a gas LDC.

Q. And would you consider a difference between a gas company and an electric company and their market risks to be -- let me start again.

Would you consider an electric company to be at risk for market conditions for both gas and power as opposed to a gas utility that would only be at risk for gas?

A. I guess I don't quite -- quite understand your question the way you've characterized it.

Are you talking -- could you try it again?

Q. Yes. Let me see if I can get it better.

Would you agree with me that the market risks for a natural gas company are different than those of an electric company because, for one thing, an electric company is open to the risks of the market for both gas and electric; whereas a gas company, its market risk or commodity risk is really limited to gas?

MS. DAVISON: I would object on the basis that it's vague and ambiguous still. It's so incredibly broad as to be meaningless.

You can answer.

BY MS. KANER: (Continuing)

Q. If you can answer it.

A. What I'm struggling with is basically the correlation between the gas and electricity markets.

We talked about earlier, within the Western United States, there's a great deal of correlation when gas prices go up, electric prices go up; when gas prices go down, generally electric prices go down. And, again, you have the -- the -- the spring runoff issue. So those are market risks.

So an LDC, if -- if -- if they're experiencing lower gas prices, the electric utilities are experiencing lower gas prices and lower electricity prices. If the LDC is experiencing higher short-term gas prices, the electric utility is experiencing higher short-term gas prices and higher electricity prices.

So if that answers your question, let me know.

Q. Let me ask you this: Given the correlation that you've just described between gas prices and electric prices, would you agree with me that it's appropriate for an electric company to use gas as a hedge for its -- for electricity?

A. Potentially. The electric utility should look at both the potential to hedge gas and/or electricity at a given point in time. They have the option of going either way. They can -- they can either buy gas or they can buy electricity. They can either sell gas or sell electricity. They could even simultaneously buy the gas and sell the electricity. So those are more options that they have versus a gas utility.

Now, is it giving them more risk, which I think was implicit in your question? That's what I'm not sure about.

Q. Do you agree, though, that they could -- that a gas company -- I'm sorry.

Do you agree with me that an electric company should look at its entire open position, both as to electric and gas, when formulating its hedging policy?

A. Yes.

Q. Okay. And then would you agree that looking at its entire open position, that it could use gas to hedge its entire open position, including the gas and electric open position?

A. It could hedge gas or it could hedge

electricity, but they're both going to serve basically electrical load.

Q. Right.

A. So it could use either one of those options.

Specifically with respect to this proceeding, what was occurring during this time period, virtually all the hedges in the out years were gas. And I don't recall the exact number, but it was literally just two or three or four electric transactions that occurred in the 2007, '8, '9 time frame.

So at least for the year 2012 that's in dispute in this case, virtually all of the transactions were going forward on gas and not by electricity in this incident proceeding.

Put another way: While they had those options available to them, the one that was used almost exclusively was just buying the -- buying the gas and the gas hedges.

Q. In your testimony, you compared PGE's hedging strategies to, I believe, Northwest Natural and Avista, right?

A. That's correct.

Q. Okay. Do you know -- and this is a do you know question, not a yes or no question -- well, I mean, it is a yes or no question.

Do you know, without explaining to me what those policies are, whether Northwest Natural or Avista -- do you know whether either one of them are using the hedging strategy that your -- that you describe in your testimony here?

MS. DAVISON: I object on the basis it's vague and ambiguous.

Is there a page you want to reference of Mr. Schoenbeck's testimony?

MS. KANER: Well, he's -- maybe we should go to his -- maybe I should do that first. Maybe we should go through what he's recommending as a hedging strategy. How about that? Then I'll come back to it.

THE WITNESS: It's in the exhibits, page 18.

MS. KANER: Thank you.

THE WITNESS: I'd assert this as confidential.

MR. TINGEY: Your recommendation is confidential?

THE WITNESS: Uh-huh.

MS. KANER: Okay.

MS. KANER: So we're in confidential mode.

(Confidential portion beginning on next page)

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Q. And then in order to execute on this recommended hedging strategy that you just described, would a utility company be buying yearly strips or quarterly strips or monthly strips?

A. It could be a mix. I would certainly expect very few yearly strips to be bought. It's rarely seen because of -- there's generally -- as gas is on the margin, the short position generally varies from month to month.

So having -- you could have what I would call a base load amount of annual strips. It wouldn't be many. I would think it would be in the range of 5 to 15 percent of your entire transactions would be 12-month annual strips.

The predominant transactions, as I said in my testimony, would be either seasonal, quarterly and then some monthly; and, again, depends upon how you're doing the time.

I certainly expect the predominant of the transactions to be seasonal and quarterly.

Q. Did you look back historically into the availability of those types of seasonal strips, either quarterly or monthly, going out -- going back four years or --

A. Oh, they've been available for years and years and years and years and years.

Q. And are they available -- are they liquid and available if you're purchasing four years ahead?

A. They would be less -- again, it goes to how you define liquidity.

There may be fewer counterparties willing to enter into, say, a monthly or quarterly strip versus an annual strip very far out.

So that's a -- that, again, says, what does that do to your decision-making process? Well, maybe you will -- you will shorten the time period or the tenor of the transactions that you're willing to enter into to take that into account.

Once you get within the four-, three-, two-year, one-year period, obviously then those instruments become even more liquid. To get to the short-term market, virtually everything is a monthly transaction for the prompt month.

So, yes, the further out you go, the availability of products in the market decline, just like any liquidity issue. The closer you get, the more parties there are you can execute the different products with.

Q. Do you believe that in the second quarter, there's a product -- I'm sorry.

Do you believe there's a second quarter product available 37 to 48 months out?

A. I'd say generally certainly a seasonal product that would encompass the second quarter.

Q. And when you say "seasonal product," you mean buying a quarter of a -- a quarter?

A. No, no. Generally, seasonal products in the gas market, the winter, or the peak season product, is generally November through March; the summer, or off-peak product, is April through October.

So certainly the April through October seasonal product would likely be available from a number of potential counterparties.

Q. And do you think you'd be able to fill the rest of the year on seasonal product, so 37 to 48 months out?

A. Well, I said it would be a combination of products.

Q. Okay.

A. Because what you're doing, again, you're looking at what you need versus what you can buy. Almost what you need is more important than what you can buy.

What I'm saying is what the market makes available are these different products, but you have to match them to your need.

Q. And do you think that there is a cost associated with buying them in strips smaller than annual strips, a higher cost associated with that?

A. When you say annual strip, you buy an annual strip that is in a fixed dollar amount.

Q. Right.

A. If you are saying you divide that into 12 monthly prices, would I get -- are you saying would I get the same average if I bought the 12 monthly values in the same forward period?

Q. (Nodding head).

A. Are you talking about transactional costs?

Q. (Nodding head).

A. Can you --

Q. Yes, I'm talking about transactional costs. Do you think you're paying a premium for buying a seasonal product as opposed to an annual strip?

A. Well, let's talk about transactional costs. I was talking in terms of the transactional costs being more kind of the administrative costs, credit and collateral.

Sounds like your question is going more to the price of the commodity itself or the hedge itself.

Q. Yes, yes. That is what my question is. Thank you.

A. So could you restate it?

Q. Yes. Do you think you'd pay a premium for buying a product on a quarterly or monthly period, in the

37- to 48-month range, you'd pay a premium in price as opposed to buying a yearly strip for that far out?

A. I'd say dealing on a -- if you're going that far, on a monthly basis, it's -- it's -- would you be paying a premium? That's kind of in the mind of the beholder because what you have are -- you definitely have -- you know, three, four, five years out, you have counterparties that would give you a price for an annual strip.

To discern from arguably a different set of counterparties what the price would be for a seasonal product or a quarterly product or how it's divided up, there could be some premium as you defined it.

What I'm struggling with is the costs are different. The costs across the 12 months are generally distributed versus -- if it was a perfectly liquid market, the answer -- in a perfectly competitive market, you should get the exact same price if you entered into 12 monthly transactions that you did for your forward 12 monthly strips. You should get basically the same average price because the volumes per day are the same. So they'd give you the same weighted average.

Once you start going to a less liquid market, which would be three, four, five years out, the premium is hard for me to discern. You'd -- I'd really need to look at the specific question to -- and specific circumstances.

But I would certainly say the availability of quarterly strips or monthly strips three, five -- or prices three, five years out are less liquid and, therefore, there may be a premium.

Q. So the difference between the bid and the asked price might be wider?

A. Oh, it definitely would be wider, yeah, definitely wider.

Q. And there definitely would be a seasonal price difference if you're purchasing April, May, June for the second quarter versus the other three quarters of the year; is that right?

MS. DAVISON: Objection; vague and ambiguous. I'm not sure what time period you're referring to.

Q. Did you study whether or not, back in the 2007 to 2009 time frame, the monthly and seasonal strips that you just described were available looking forward three to four years?

A. I'm absolutely sure they're available.

Q. And have you studied what the difference in price was between those and yearly strips?

A. I have not done that.

Q. Okay. And you described earlier in your testimony that PGE's execution of its hedging strategy resulted in hedging in a front-loaded way. I think that's the term you used.

A. Yes, that's correct.

Q. Okay. What exactly do you mean by that?

A. Let's go back to the graph again because I think that --

Q. Which page are you looking at?

A. Page 12 of Exhibit 102.

Q. Okay.

(Confidential portion beginning on next page)

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Q. And have you -- but this graph, as I understand it, is only looking at PGE's gas procurement portfolio, right?

A. Uh-huh.

Q. Have you looked at this in terms of PGE's power needs, power portfolio, not just gas but power?

A. Well, I looked at the corresponding electrical short-term hedges.

Q. Okay.

(Confidential portion beginning on next page)

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Q. So the report you referred me to was just as to natural gas requirements?

A. That's why I said it's not the -- it's not the entire report.

Q. Okay.

A. The best thing to look at would be just kind of the cover page. I think generally these reports are -- sitting here today, I can't tell you the -- they are multiple-page reports. This is not the entire report.

Q. Did you look at PGE's power requirements over that same time period?

A. Well, that's, in part, what this is showing is there's -- I believe there's a comparable page for electricity, and it shows you the need.

Q. And do you think it's appropriate for PGE to look at its overall portfolio, including its gas needs and its power needs, when both formulating and executing its hedging strategy?

A. Yes. I previously stated that.

Q. Okay.

A. We're concerned about, again, the natural gas -- the execution of the natural gas strategy was basically shown by that one page with all the purchases, just too far out because you don't know -- you don't have that level of certainty about what your load and natural gas need will be.

When you look in terms of the volumes that those represented, that's -- (pause-referring). If you look at page 13, Exhibit 102, it's showing what they've procured versus their need on a forward basis for the two major gas-fired plants.

(Confidential portion beginning on next page)

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That's what I'm objecting to is there is far too much gas purchased at that time period for the projected need.

Q. All right. I want to go back to the graph that we were looking at on page 18 of Exhibit 102.

A. The table?

Q. Yes, the table. Sorry.

(Confidential portion beginning on next page)

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(EXHIBIT No. 2, 7/27/11 letter from P. Hager to Davison Van Cleve, with attachments, marked.)

BY MS. KANER: (Continuing)

Q. I've marked as Exhibit 2 ICNU's response to PGE's first set of data requests, and I want to refer you to the responses to number 5 and 6.

I'm going to apologize. Does somebody have one that's highlighted?

A. I do.

Q. All right. Let's start again.

You've been handed Exhibit Number 2, which is ICNU's response to PGE's first set of data requests, and I want to refer you to ICNU's response to data request 6.

A. 6?

Q. 6.

A. Thank you.

Q. That acknowledges that aside from your direct testimony that was filed here that we're discussing now in the current proceeding, that neither ICNU, nor anybody else on its behalf, provided any testimony regarding PGE's gas and electricity purchasing or hedging strategy in PGE's midterm strategy docket since January 1, 2006.

Do you see that?

A. Yes, that's what the response says.
Q. And my question is, why? Why didn't ICNU comment or otherwise give testimony regarding PGE's hedging strategy in the past five years?
A. I don't know.
Q. Okay. I have the same question referring to data request number 7, which says, "ICNU made no comment or written filings, nor did anyone on its behalf, comment on PGE's gas purchasing strategy, electricity purchasing strategy or its hedging strategies in its docket LC 48 or LC 43."
And I have the same question: Do you know why ICNU made no comment as to PGE's strategies in those dockets?
A. I have the same answer: I don't know.
Q. Okay.
MS. DAVISON: Are we getting to a point to break for lunch? Do you know how much more?
MS. KANER: I have more.
We can go off the record.
(Lunch: 11:49-1:18 p.m.)
(Mr. Sturm not present; Somer Templet present.)

BY MS. KANER: (Continuing)

Q. I want to make sure I understand your direct testimony in that your -- based on your review of PGE's hedges, you didn't find anything inconsistent in their execution of their hedging versus their hedging policy?

A. I believe what the testimony states is there are -- were some hedges that went beyond what I would call kind of a standard product hedge. So there would be additional approvals required pursuant to their hedging policy. And I said that was permitted under the hedging policy.

Q. Okay.

A. And what was the second half of your question?

Q. My question is, did you find anything that violated their hedging policy? That would be a different way of looking at it.

A. No.

Q. Okay. All right. I want to look at how you calculated the numbers that you are saying should be disallowed. So looking at page --

MR. TINGEY: This part better be confidential.

MS. KANER: Now we're getting into confidential.

(Confidential portion beginning on next page)

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Q. And were you aware that these were already reported and allowed in the AUT for 2010 through 2011?

MS. DAVISON: Objection; vague. I'm not sure what "these" is referring to.

Q. Those transactions that you just identified.

A. I was not aware of that.

Q. Okay.

A. I -- you know, can I rephrase my answer? I think you need to be more specific on exact -- exactly which transactions you're referring to.

Q. Those with a start date of -- in 2010 or 2011, which are primarily the beginning ones that you identified all the way -- at least through number 20, and then there are a few after that.

A. Would you be talking all the way to 26?

Q. Well --

A. Is that correct?

Q. The start date is -- so down to 20, 1 through 20 I would include; then 23 and 26.

A. Yes, I was unaware of that.

Q. Okay. I want to --

A. I was just trying to nail down the exact transactions.

Q. Okay. I want to go back to your Exhibit 102, page 18, the table.

A. Uh-huh.

Q. I want to talk about the top table. I just want to make sure I completely understand it.

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Q. Okay.

A. That's why I use the word "target." It's not an absolute, precise amount.

Q. So it's flexible in some respects?

A. Uh-huh.

Q. Based on -- that's a "yes"?

A. Yes, it is. Sorry.

Q. That's all right. It's just that it won't come out on the record. We won't know if it was a yes or no.

And it's flexible based on some of the factors that we talked about, including the liquidity of the market as you've defined it?

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Q. Okay.

A. Because, again, it's the philosophy that you can't outsmart the market. You may think it's better to get well in excess of the 20 percent because you think prices are at an all-time low, but that's not the intent. It's to get reasonably close to that amount. It's not to go well above or well below it.

Q. But 5 percent either direction, in your view, would be reasonable?

A. The limits.

Q. The limits?

A. The outer limits, uh-huh.

Q. Okay. Are you aware of any study or authority that establishes a greater volatility reduction from hedging only four years out as opposed to five years out?

A. I'm sorry. Can you repeat the question? Any study?

Q. Any study or any other authority, aside from your opinion, but any other study or authority, some third-party source, that would establish that there's a greater volatility reduction from hedging only four years out as opposed to five years out?

A. By the amount you hedge, you can control your volatility in the risk reduction. So I guess I'm -- I'm not connecting the four- or five-year period.

But what's happening between the four- and five-year period, again, you're having fewer counterparties. You're having a greater spread on the gas hedging side and also, particularly on the load side, you're facing more risk the fifth year versus the fourth year. Your uncertainty is generally greater as the jaws of risk and uncertainty broaden as you go out in time.

So, you know, for those reasons, that's why I maintain the four years is more appropriate than the five.

Q. I understand that that's your opinion and that you've testified to it here and you've got reasons for it.

What I'm asking is, is there some other authority, some third-party source that you know, that establishes that there is a greater volatility reduction if you're only hedging four years out as opposed to five years out?

A. But are you -- are you saying, when you go five years, is it the -- is the volatility reduction within the first four years? That's --

Q. No. I'm including the fifth year. So I'm saying, is there some reason that you can't -- there is going to be volatility in the fifth year.

A. Right.

Q. Is there some reason you can't hedge against it?

A. No, you could hedge against it. It would reduce your risk in that year, but I'm saying there are offsetting other aspects that may make that an imprudent decision.

With respect to third-party studies, I can say, yes, I'm aware of third-party surveys that have said the typical hedging strategy is 48 months or less.

Q. Can you tell me what those studies are?

A. It's -- again, it's -- the problem is they're -- they've been under confidentiality agreements and at another jurisdiction. So this is a problem.

Q. Is there some -- I'm trying to figure out, is there some way we can access it that it's not -- perhaps there's portions of it that are not under a confidentiality agreement? Is there --

A. There's --

MS. DAVISON: No. You know, if I can jump in, I mean, basically what Mr. Schoenbeck is saying is that for every one of these regulatory proceedings, as Mr. Tingey can attest to, the utility comes in and files for a protective order and marks a huge amount of this information confidential. And a lot of this data, including third-party data, is considered proprietary.

So the only way that Mr. Schoenbeck could divulge that data is if you get, you know, approval from either the utility or from the Utility Commission.

And, you know, sitting here today, he obviously can't do that.

MS. KANER: Let me ask a broader question, then.

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A. Up until 12 months out.

Q. Right, up until 12 months out.

Are you aware of any other electric utility company that follows that hedging strategy? You don't have to tell me what one, just are you aware of any electric utility that follows that prescribed hedging policy?

MS. DAVISON: Objection; asked and answered repeatedly this morning.

MS. KANER: Actually, he didn't answer it because you told me it was vague, and I -- I had to define it. So we went back to his exact testimony. Now I'm actually asking the question.

THE WITNESS: What the -- the question I answered this morning, that would be generally the same again today.

I'm familiar with several utilities that use a programmatic approach, with some flexibility, which is what this is, my proposal is, and it really gets down to how many years. Is it three or is it four?

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BY MS. KANER: (Continuing)

Q. And within those several utilities that you know, are any of them electric power companies?

A. I'm talking exclusively about electric power companies in answering your question. I should have stated that.

Q. Okay. And did they hedge -- do they use this program to hedge only gas, or are they using this program to hedge gas and power in the aggregate?

A. Generally, for most combination electric and gas utilities, they consider both. And, generally, the parameters they hedge with for either gas or electricity are extremely similar, if not exact.

Q. Okay. So this -- I'm going back to your table.

A. Uh-huh.

Q. This is -- this hedging strategy is entitled a gas hedging strategy?

A. Uh-huh.

Q. And would you have the same hedging strategy for power, for electricity?

A. Again, I think every hedging strategy is unique to the individual circumstances. You know, certainly as a launching-off point for electrical hedging, hedging strategy, it could start here, but there may be some nuances because generally what my testimony states is the gas -- the risk associated with gas can be slightly more since it's on the margin. It's the marginal resource versus the electricity needs.

So there's -- there's -- there's -- as it's on the margin, the net position associated with gas seems -- can be slightly more sensitive than electricity, but it would be a good starting point. There may be a little nuance is what I'm trying to say, but it would be potentially similar.

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A. One of the main things you want to look at in electricity is with respect to the capacity component, as well as a volumetric component.

This is more akin to a volumetric. If you have a capacity in place against your peak demand, that would be the other nuance than the -- doing the electricity hedging strategy is you're covering both capacity and energy.

Q. So what if --

A. In other words, when you're buying gas, you're buying gas to fuel a plant.

Q. Right.

A. You can buy electricity to displace the plant, but you also may need more electricity for a capacity reason is the nuance.

Q. Okay. So would you look at that risk, that open risk for both gas and electric together?

A. Like we said earlier, you have to continually be looking at your open position and deciding what's the prudent hedging vehicle, whether it be electricity or gas.

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A. You --

MS. DAVISON: Objection; asked and answered. I believe Mr. Schoenbeck just answered that question.

Q. Do you understand that even if PGE procures all of its gas needs, it would still be short on power?

A. On capacity.

Q. On power?

A. Well, are -- it only has -- it has two major gas plants.

Q. Right.

A. And the -- the electricity need is much greater than the power that can come from the two gas plants. So there's still a short position in electricity that has to be procured for.

Q. Right. And that's what I'm asking about, whether or not you look at those in the aggregate.

A. You look at them -- I guess, what do you mean by aggregate? You're looking at them both all the time.

Q. Right. So if you're looking at both all the time, could you be using gas to hedge your electric power?

A. Only -- only to the extent you have gas-fired facilities. Basically, it gets back to you can always do a financial hedge, even if you don't have a gas-fired resource.

But given you're not going to do that, you can

only hedge your gas need up until the amount of gas that can be burned in your resources.
Q. Why would you not do that? Why would you not hedge gas to meet your power need, your electric need, even if it's beyond your capacity?
A. These are all gas financial hedges. What does that get you?
Q. Right. Well, given that we've already talked about the fact that gas and electric prices are correlated, why can't you use gas to hedge your electric prices?
A. Where are you going to get the electricity to serve the load? I'm really missing something. I -- are you just talking about your -- you're hedging the gas.
You've hedged gas and you've procured gas, based on the hedging strategy, to serve your gas-fired resources.
I'm sorry. Why would you want to enter into more gas financial transactions?
Q. To hedge your electric power risk, your open position on power.
A. But what's that getting the customers? It's not getting them power to be delivered.
Q. It's getting them -- it's a price hedge. It's getting them reduced volatility --
A. Uh-huh.

Q. -- in power prices.

A. Right. So you've -- you've -- you've done the gas hedge because you thought that was more advantageous for the market rate?

Q. Right.

A. You could do that.

Q. Okay. How would you describe the risk tolerance of residential customers to price volatility for electricity?

A. How would you define risk tolerance? That's --

Q. That's what I'm asking. How much of a -- how much volatility do you believe that residential customers are willing to absorb?

A. Well, if you look at what Pacific Gas & Electric put in, something akin to real-time rates in Bakersfield at the start of the summer, I would say not much. No one likes to get a $1,300-a-month electric bill.

Q. Right. All right.

And how would you -- and by comparison, how would you describe the risk tolerance for commercial customers in price volatility?

A. I would say for small commercial customers, it would generally be along the same lines as residential customers.

Q. Which is not much?
A. Uh-huh.
Q. Okay. And then how would you describe the risk tolerance for industrial customers to price volatility?
A. I would say most people, as a general rule, like more stable rates, predictable, but that always comes at a price.
No one likes to see a substantial jump in their power costs.
Q. Okay. So what percentage of the ICNU's members -- what percentage of their annual cost structure is energy consumption?
A. I have no idea.
MS. DAVISON: Objection; vague and ambiguous.
Q. Well, I --
MS. DAVISON: Each member has a completely different make-up of what energy is a portion of their cost.
MS. KANER: That's fair.

BY MS. KANER: (Continuing)
Q. Would you say that a considerable amount of a typical ICNU member, that their cost structure is based on their power consumption?

A. A considerable amount of what?

Q. Of their overall costs are their power costs.

A. I'm not sure.

Q. All right. Do you believe that customers, in general, value price stability beyond a four-year period?

A. I'm not sure about that. I have -- I haven't given it much thought.

I -- certainly, the shorter period is more stable. I would suspect most people do not think in terms of budgeting electricity, unless you're the largest industrial customers, beyond four years.

Generally, the hedging strategies I'm familiar with for industrial end users, for the most part, don't go beyond three years.

Q. Well, don't large industrial customers make long-term capital investments in part based on what they're projecting power costs will be?

A. Well, certainly they take that into account. They all have some sort of financial models that take into account the metrics and the payback they have on the investment.

Q. All right. Given that PGE's IRP only plans for beyond five years and your recommendation here is only planning a four-year period, are you suggesting that PGE not make any plans for hedging and volatility in year five?

A. I think the very start of your question you kind of lost me because I thought you stated PGE's IRP did not extend beyond five years.

Q. No, it extends beyond five years. I'm sorry. Let me start again. If I misstated it, I apologize.

Given that PGE's IRP is planning beyond five years and your hedging strategy is only for a four-year period, are you suggesting that PGE not make any plans to hedge price volatility in that fifth year?

A. No. I said earlier this morning that you have to hedge for -- hedging being you have to plan on certain year load for a greater than three- or four-year period; particularly when it comes to constructing a resource, the lead times associated with that go well beyond three years. So you need a longer period of time.

It's with respect to what I would consider more market operational hedging as opposed to long-term planning that the period should be shortened, and that's where I'm suggesting it should be four years instead of five.

It's not that PGE stop planning for serving any loads or obtaining any resources beyond five years.

Q. So should the IRP start in year four?

A. Excuse me. Does the IRP start in year four?

Q. No. Should it? There is -- what I'm telling you is currently, PGE's IRP is for beyond five years. It's planning beyond five years.

A. Uh-huh.

Q. Your strategy here only encompasses a four-year period. So there would be a gap between the strategy that you're recommending here and PGE's IRP, which is its long-term planning.

A. It doesn't necessarily have to be a gap at all. You should -- you could just arbitrarily say that fifth year is now part of the long-term planning years instead of the medium planning years.

Q. So what do you suggest the fifth year strategy be?

A. The fifth year -- by the fifth year, you could actually bring in, if you wanted to, a new long-term contract or a new resource.

Q. Those two things that you just described, the long-term contract or a resource, a long-term resource, would be something that would have to be planned in the IRP, would it not?

A. Your IRP looks at all the possibilities for serving your projected load, and that can include -- it can include a medium-term purchase power contract, a long-term purchase power contract, any option you'd want to consider. Your whole portfolio of possible resources could be used.

Q. Okay.

A. Basically, what my position is saying is for that fifth year, you should not look at forward -- you should not rely heavily on forward gas purchases. That's what it's saying. Anything else is still amply available.

Q. Okay. I want to focus you on page 9 of your testimony.

A. Yes, I'm at page 9.

Q. The very last sentence, you say, "In order to be able to respond to the many market conditions this industry can regularly experience, some open position should be maintained going into the prompt month."

A. Uh-huh.

Q. How much open position are you suggesting should be maintained in the prompt -- going into the prompt month?

A. Well, again, I didn't specify a specific exact target. But it -- in my mind, obviously, it's getting smaller and smaller.

(Confidential portion starting on next page)

ENTIRE PAGE IS CONFIDENTIAL AND REDACTED

PURSUANT TO PROTECTIVE ORDER 11-102

MS. KANER: I need to take a break, and I'm going to see what else I have to cover.

(Pause in proceedings: 2:00-2:11 p.m.)

MS. KANER: I'm done.

They don't have any questions.

Stephanie, you're still there. Do you have any questions?

MS. ANDRUS: I don't have any questions.

MS. KANER: Okay. Are we done?

MS. DAVISON: We're done.

(Deposition adjourned at 2:12 p.m.)

STATE OF OREGON)
) ss
COUNTY OF MULTNOMAH)

I, Heather M. Ingram, Certified Shorthand Reporter for the State of Oregon, do hereby certify that DONALD W. SCHOENBECK personally appeared before me at the time and place mentioned in the caption herein; that the witness was by me first duly sworn under oath and examined upon oral interrogatories propounded by counsel; that said examination, together with the testimony of said witness, was taken down by me in stenotype and thereafter reduced to typewriting; and, that the foregoing transcript, pages 1 through 132, both inclusive, constitutes a full, true and accurate record of said examination of and testimony by said witness, and of all other oral proceedings had during the taking of said deposition, and of the whole thereof.

Witness my hand at Portland, Oregon, this 5th day of August, 2011.

Heather M. Ingram
Oregon CSR No. 93-0279
Washington CSR No. 2188

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 228

In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC	)
	)
2012 Annual Power Cost Update Tariff	)
(Schedule 125)	)
	)

EXHIBIT ICNU/110

PGE RESPONSES TO ICNU DATA REQUESTS

REDACTED VERSION

August 24, 2011

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 056

Request:

Please provide copies of all enabling agreements, master agreements or other agreements that were in effect in 2007 and 2008 relating to actual or potential gas purchases whether physical or financial in nature.

Response:

Agreements with counterparties to execute physical gas or financial gas and power transactions effective in 2007 and 2008 are provided as Attachment 056-A.

Copies of PGE's "Credit Tenor Report", which list all counterparties and identifies those approved to transact with, as of January 2007 and December 2008 are provided as Attachment 056-B.

Attachments 056-A and 056-B are confidential and subject to Protective Order No. 11-102.

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 058

Request:

Please describe how, during 2007 and 2008, PGE estimated the differences in price sensitivity and risk tolerance to price volatility between each of its customer classes, and provide documentation of these estimates or analyses.

Response:

(a) Price Sensitivity

PGE's testimony regarding the load forecast in UE 180 (UE 180 / PGE / 1200 Nguyen, page 2 – 4) describes how price elasticities were estimated and applied to (test year) 2007 load. Table 2 (page 3) lists the specific elasticities for customer classes used in UE 180 and earlier proceedings (UE 1039 and UE 115). Detailed elasticities by granular customer group (i.e., by residential heat type and NAICS classification) and their estimated equations are in the UE 180 Work Papers, pages 257 – 285. The computer codes for calculating the price effect on demand (load), i.e., the change in customer demand calculated by applying the estimated elasticity to a specific change in the (real) price, are in the UE 180 Work Papers, pages 286 – 332. PGE's load forecast testimony in UE 180 is included with this response as Attachment 058-A. PGE's load forecast work papers in UE 180 are included with this response as Attachment 058-B.

Price elasticities, equations and computer codes used to calculate the price impacts on demand for (test year) 2008 can be found in the UE 188 Work Papers, pages 293 – 368. These work papers are included with this response as Attachment 058-C.

(b) Price Volatility

In a customer survey dated February 2006, PGE asked customers the following (question 38C):

> "In general, would you prefer that PGE pursue longer-term arrangements that focused on making any price increases small and predictable, or pursuing resources that should have lower prices on average, but with price increases that are less predictable?"

Responses to this question were grouped by customer class: residential, general business, and key customer. In each customer class, 50% or more of respondents expressed a strong preference for predictable rates. Conversely, a small percentage of respondents in each customer class (less than 20% in each group) expressed a clear preference for lower but less predictable rates. Question 38C was provided as PGE Exhibit 301. The complete survey was provided in work papers for PGE Exhibit 300.

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 065

Request:

A) Please provide a list of what factors that PGE, during 2007 and 2008, considered to be the appropriate goals of a gas hedging strategy for an electric utility as well as any documentation or reports demonstrating PGE's analysis of the relative importance of those goals.

B) Please provide copies of all mechanisms, studies, formulae, or other documents used by PGE during 2007 and 2008 to determine what weight to accord each of the objectives of PGE's gas hedging strategy when determining the optimal gas open position to maintain for each year between the prompt date and 60 months in the future.

Response:

A) A detailed discussion of PGE's processes and procedures for implementing the Mid-Term Strategy (MTS) was provided in the testimony filed in PGE Exhibit 400. As stated repeatedly in that testimony, PGE's hedging strategy is not limited to just "gas hedging" as suggested in the request. Rather, PGE's MTS is a comprehensive hedging strategy encompassing customers' exposure to the price volatility of both electric and gas commodities.

B) A detailed discussion of PGE's procedures to set the acquisition targets under PGE's MTS was provided in the testimony filed in PGE Exhibit 400. PGE's hedging strategy manages price risks for both electric and gas commodities. PGE's MTS does not have an "optimal gas open position to maintain" because PGE's customers are not ultimately exposed to just gas, but to electric and gas prices in aggregate.

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 066

Request:

Please provide all work papers or other documentation relied upon by PGE between 2007 and 2009 that attempted to quantify the actual cost savings that the company believed it could have realized by purchasing financial gas hedges in yearly strips rather than as quarterly or seasonal products.

Response:

PGE objects to this request on the basis that it is overly broad and unduly burdensome. Without waiving this objection, PGE responds as follows:

PGE regularly interacts with four or more over-the-counter (OTC) brokers, not including the IntercontinentalExchange (ICE) electronic broker. From these OTC brokers, PGE receives literally hundreds of quotes each day for products in the power and natural gas markets. PGE Power Operations personnel also periodically check the direct, or bi-lateral, market for future years' individual months and quarters, as well as other non-standard products that could potentially fit PGE's customer needs. PGE does not keep detailed records of all pricing information that we come into contact with on a daily-basis as it is impractical to do so. End-of-the-day broker-provider forward curves are readily available, and PGE does maintain a daily record of market indications compiled into forward curves.

PGE's Power Operations personnel responsible for executing transactions have extensive wholesale market experience (well over 60 years combined), which has shown them that forward markets for individual months and quarters for natural gas, when available, are typically priced well outside the normal 5 cents per MMBtu spread when considering 2 years or longer from delivery for Sumas and out 3 years for AECO, and typically are not available past that tenor.

In addition to the experience of PGE's traders, PGE has reviewed data from the ICE trading platform for 2012 delivery products being traded in 2007 and 2008. From this data, PGE makes the following observations for 2007 to 2008 timeframe (255 trading days per year):

- Quarterly and Monthly products were quoted for Rockies starting 3/11/2008. In most cases, no transactions were executed except for 14 days for quarterly or monthly products. These were basis spreads between Henry Hub (HH) and Rockies, which means that PGE would have had to also transact at HH to match customers' risks.
- During this timeframe, there was 1 instance where the AECO basis spread was quoted for a monthly product. It was a lone offer with no bid and no transaction executed on ICE.
- There was no instance of Sumas quarterly or monthly basis spreads being transacted nor quoted for that entire duration of 2007 through 2008.
- By contrast, calendar and seasonal strips for these same locations were readily quoted and transacted on:
    - From March 2007, 2012 calendar strip products were quoted for AECO, and the first transaction occurred on 6/29/2007. Transactions for 2012 calendar strips occurred regularly throughout the 2007–2008 time frame.
    - A similar pattern is observed, but starting in January 2008 on, for Rockies 2012 calendar strip during this timeframe
    - A similar pattern is observed, but starting in February 2008 for Sumas 2012 calendar strip during this timeframe.

PGE's Power Operations observes this empirical data live daily and supplements the ICE information with OTC and bi-lateral market intelligence. The OTC and bi-lateral markets are often better able to manage long-dated transactions at times and provide much needed liquidity for Sumas and Rockies in the form of multi-year calendar delivery contracts. Thus, attractive market opportunities to transact for individual months and quarters in periods beyond the prompt 24 months rarely arise for the locations of interest. Because seasonal products, although liquid, would still leave a mismatch in tenor, PGE turned to the widely used hedging technique of using highly correlated products to hedge customers' risks using calendar strips.

Due to the very tight correlation of gas-to-power (approximately 99% on a forward calendar year-basis), and the correlation of Q2 gas to Q1, Q3, and Q4 gas, PGE customers would not have benefited from PGE purchasing illiquid custom gas products at a premium over PGE's mid-market estimate. Instead, PGE executed highly liquid and tightly priced calendar strips relying on the forward correlation of gas-to-power to hedge the forward power risk, as well as the correlation of Q2 gas to Q1, Q3, and Q4 gas to hedge the overall annual forward gas risk.

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 067

Request:

A) With reference to the transactions listed in Schoenbeck Ex. 102, does PGE believe that OPUC, in UE 208 and/or UE 215 or any other proceeding, has approved the transactions listed in lines 1-20 and lines 23-26?

B) If PGE believes that the OPUC has approved these transactions, please provide the Commission order and page number in which these transactions were approved.

Response:

A) The transactions (with multi-year terms) listed in ICNU Exhibit 102, lines 1—20, 23, and 26, were included in PGE's power costs and included in the rates set by the Commission in either, or both, Docket Nos. UE 208 (Order No. 09-433) and UE 215 (Order No. 10-410).

B) Please see Part A above.

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 068

Request:

With respect to Exhibit PGE/500, please provide copies of all testimony submitted by Mr. Stoddard since January 1, 2000, which addresses gas or electric hedging policies.

Response:

Mr. Stoddard has not previously submitted testimony specifically addressing "gas or electric hedging policies." Testimony provided in the following proceedings addressed hedging or utility procurement:

People of the State of Illinois, ex rel. Illinois Attorney General Lisa Madigan v. Exelon Generating Co., LLC et al., FERC Docket No. EL07-47-000. Affidavit assessing reasonableness of outcomes in the Illinois power procurement auction on behalf of J. Aron & Company and Morgan Stanley Capital Group, July 2007. [publicly available: http://elibrary.ferc.gov/IDMWS/search/fercgensearch.asp]

Testimony before the Committee on Corporations, Rhode Island House of Representatives, regarding 2002 House Bill 7786, *An Act Relating to Public Utilities and Carriers,* April 2002. [oral testimony; no transcript was made]

DPUC Investigation Into Viability of Power Supply Contracts to the Connecticut Light and Power Company and the United Illuminating Company, Connecticut DPUC Docket No. 01-12-05, direct testimony on behalf of NRG Energy, Inc. and affiliates, February 2002. [Written testimony was not filed. Opening comments and the presentation are provided as Attachments 068-A and 068-B]

Joint Study by the Department of Public Utility Control and the Office of the Consumer Counsel Regarding Electric Deregulation and How Best to Provide Electric Default Service After January 1, 2004, Connecticut DPUC Docket No. 01-12-06, direct testimony on behalf of NRG Energy, Inc. and affiliates, January 2002. [oral testimony]

The Narragansett Electric Co. Rate Changes for January 1, 2002, Rhode Island PUC Docket No. 3402, direct testimony on behalf of the Hon. John B. Harwood, Speaker of the House of Representatives, State of Rhode Island and Providence Plantations, December 2001. [This testimony is provided as Attachment 068-C]

August 22, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 15, 2011
Question No. 069

Request:

With respect to Exhibit PGE/500, please describe and provide a copy of each electrical utility hedging policy that Mr. Stoddard examined in preparing his testimony.

Response:

Mr. Stoddard did not examine any other utility's hedging policy in preparing his testimony. His testimony in PGE Exhibit 500 is based on the knowledge acquired over the past decade.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 072

Request:

With regard to Exhibit 400, Lobdell-Outama/16, lines 12-14, please provide a detailed explanation of the "market place" as you are using the term.

Response:

In lines 12-14 of the PGE Exhibit 400, "market place" (or "market") is as defined below:

For Financial Power: PGE's market is the Mid-Columbia trading hub for Heavy and Light Load Hours for the 60-month trading window as transacted on ICE, in the bi-lateral market, as well as Over-The-Counter (OTC). For the OTC market, PGE uses 4 primary brokers: Pre-Bon, Amerex, Tullet, and ICAP.

For Financial Gas: PGE's market is composed of the AECO, SUMAS, and ROCKIES trading hubs for the 60-month trading window. For pricing indications, PGE utilizes ICE as well as quotes obtained in the bi-lateral market.

The bi-lateral market is further defined as the list of counterparties with whom PGE has enabling agreements, as provided in PGE's Response to ICNU Data Request Nos. 056, 074, and 075.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 073

Request:

With regard to Exhibit 400, Lobdell-Outama/16, lines 12-14, please provide copies of all documents regarding all PGE market place assessments done during 2007 and 2008.

Response:

Please see PGE's Response to ICNU Data Request No. 066 and 088. Some additional documentation was provided in PGE's Response to ICNU Data Request No. 090.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 074

Request:

With regard to Exhibit 400, Lobdell-Outama/16, lines 12-14, please provide a complete copy (including all appendices) of each enabling agreement (for example, ISDA agreement) PGE had in place with any counter party willing to execute a financial gas hedge transaction for a period of time greater than 12 months from the prompt month as of May 1, 2007.

Response:

Agreements with counterparties to execute financial gas and power transactions effective in 2007 and 2008 were provided in PGE's Response to ICNU Data Request No. 056 as Attachment 056-A. Copies of PGE's "Credit Tenor Report", which list all counterparties and identifies those approved to transact with, as of April 27, 2007, are provided as Attachment 074-A.

Attachment 074-A is confidential and subject to Protective Order No. 11-102.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 077

Request:

With regard to Exhibit 400, Lobdell-Outama/28, lines 12-14, please describe or explain the term "readily available" with reference to exact markets and/or counter parties and time to execute.

Response:

"Readily available", as used in PGE Exhibit 400, page 28, lines 12–14, is with reference to calendar products for gas and power, as well as seasonal strips for gas (as indicated on page 28, line 12), that are liquidly traded in the "market" as that term is defined in PGE's Response to ICNU Data Request No. 072.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 078

Request:

With regard to Exhibit 400, Lobdell-Outama/28, lines 15-17, in answering the question, how are you interpreting the words "market place"?

Response:

PGE Exhibit 400, page 28, lines 15–17, addresses the "market" as that term is defined in PGE's Response to ICNU Data Request No. 072 with respect to monthly or quarterly products.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 079

Request:

With regard to Exhibit 400, Lobdell-Outama/28, lines 15-17, please specify the exact markets and counter parties that you believe did not offer monthly or quarterly products in 2007.

Response:

PGE Exhibit 400, page 28, lines 15–17, addresses the "market" as that term is defined in PGE's Response to ICNU Data Request No. 072 with respect to monthly or quarterly products. The counterparties addressed are those indicated in PGE's Response to ICNU Data Request No. 074.

August 80, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 080

Request:

For each of the gas enabling agreements PGE had in place as of May 2007, please indicate when PGE discussed the possibility of executing a transaction for a monthly or quarterly product with that counter party at any time subsequent to when the enabling agreement was executed.

Response:

Please see PGE's Response to ICNU Data Request No. 066.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 081

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 1-4, does PGE agree that the quoted passage from Mr. Schoenbeck's testimony was specifically addressing electricity off-peak forward prices?

Response:

Yes.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 082

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 1-4, does PGE agree that generally, monthly gas prices reported by ICE for a major hub such as Sumas, AECO, or the Rockies go far beyond the monthly off-peak electricity prices reported for Mid-C? In other words, ICE reports different prices for gas but reports the same price for months within a quarter relatively quickly (after about 16 months) for electricity off-peak prices.

Response:

It is PGE's experience that monthly and quarterly products for Sumas, AECO, and Rockies are generally not liquid past 24 months. Monthly or quarterly Mid-C Off-Peak electricity products are generally not liquid past 16 months. Monthly prices reported by ICE would likely be available as the products become liquidly traded.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 083

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 7-11, please provide the exact markets that PGE is referring to in this portion of testimony.

Response:

PGE Exhibit 400, page 29, lines 7–11, addresses the "market place" (or "markets") as that term is defined in PGE's Response to ICNU Data Request No. 072 with respect to the specific products referenced in the citation above (monthly and quarterly).

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 084

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 7-11, please define how PGE is using the word "traded." Where and how does PGE do this trading?

Response:

In PGE Exhibit 400, page 29, lines 7-11, "traded" is defined as having volume executed on ICE. ICE is used as an indication of liquidity. PGE has access to ICE, as well as bi-lateral and OTC markets for market intelligence regarding executed transactions.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 085

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 7-11, please provide all supporting documents or analysis that PGE is relying on to state that "custom products" would come at a "material premium" relative to calendar strips. As part of this response please quantify a "material premium."

Response:

Please see PGE's Response to ICNU Data Request No. 066.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 086

Request:

With regard to Exhibit 400, Lobdell-Outama/29, lines 15-17, please provide all supporting documents or analysis that PGE is relying on to state that quarterly and monthly products acquired in 2007 and 2008 would have had a "significant premium." As part of this response please quantify a "significant premium."

Response:

Please see PGE's Response to ICNU Data Request No. 066.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 087

Request:

With regard to Exhibit 400, Lobdell-Outama/30, lines 13-17, with regard to a Q2 premium, please quantify the "premium" PGE is referring to past the prompt year.

Response:

Please see PGE's Response to ICNU Data Request No. 066.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 088

Request:

With regard to Exhibit 400, Lobdell-Outama/30, lines 13-17, please provide all supporting documents or analysis that PGE is relying on to assert that beyond the prompt year, "liquidity for the Q2 power product is scarce." As part of this response, please specify the exact markets PGE is referring to in this portion of testimony.

Response:

PGE's traders perform market discovery per the process described in PGE's Response to ICNU Data Request No. 066. PGE Exhibit 400, page 30, lines 13–17, addresses the liquidity of a Q2 power product in the "market" as that term is defined in PGE's Response to ICNU Data Request No. 072.

Additionally, PGE has reviewed data from the ICE trading platform for 2012 delivery products. From this data, PGE makes the following observations about financial power products with Q2 2012 delivery:

For the 2007 through 2008 timeframe (255 trading days per year):

- Out of approximately 510 trading days, there were 33 days in which ICE recorded a bid, an ask, and sometimes both.
- No transactions for Q2 2012 products were executed during this time frame.

For the 2009 through 2010 timeframe:

- Q2 2012 became quoted more frequently although the first transaction was not recorded until 1/22/2010.

- In all, there were only 8 days where Q2 2012 delivery products were transacted in 2010.

For 2011:

- There were nearly daily Q2 2012 quotes.
- Q2 2012 products have been transacted 43 days to date

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 089

Request:

With regard to Exhibit 400, Lobdell-Outama/32, lines 17-18, please provide all supporting documents or analysis that PGE is relying on to assert the premium for Q1, Q3 and Q4 gas swaps is high prior to the prompt year. As part of this response, please quantify "high."

Response:

Please see PGE's Response to ICNU Data Request No. 066.

August 23, 2011

TO: S. Bradley Van Cleve
Davison Van Cleve, P.C.

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 228
PGE Response to ICNU Data Request
Dated August 17, 2011
Question No. 090

Request:

With regard to Exhibit 400, Lobdell-Outama/36, lines 1-4, please provide copies of any "pre-approval memo" and any associated workpapers for the transactions listed on Exhibit ICNU/102, Schoenbeck/1.

Response:

Pre-approval memos and related documentation for the relevant transactions are provided as Attachment 090-A.

Attachment 090-A is confidential and subject to Protective Order No. 11-102.

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 228

In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC	)
	)
2012 Annual Power Cost Update Tariff	)
(Schedule 125)	)
	)

EXHIBIT ICNU/111

SUMMARY OF PGE'S ELECRICITY HEDGES

REDACTED VERSION (ENTIRE EXHIBIT IS CONFIDENTIAL)

August 24, 2011

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 228

In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC	)
	)
2012 Annual Power Cost Update Tariff	)
(Schedule 125)	)
	)

SURREBUTTAL TESTIMONY OF

DONALD W. SCHOENBECK

ON BEHALF OF

THE INDUSTRIAL CUSTOMERS OF NORTHWEST UTILITIES

REDACTED VERSION

August 24, 2011

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Donald W. Schoenbeck. I am a member of Regulatory & Cogeneration Services, Inc. ("RCS"), a utility rate and economic consulting firm. My business address is 900 Washington Street, Suite 780, Vancouver, WA 98660.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes. I provided direct testimony in this proceeding on June 30, 2011, which was designated ICNU/100-ICNU/107.

Q. WHAT TOPICS WILL YOUR SURREBUTTAL TESTIMONY ADDRESS?

A. I will respond to the arguments raised by Portland General Electric ("PGE" or the "Company") in its rebuttal testimony with regard to the recommended ICNU adjustment addressing the execution of the Company's hedging policy.

Q. PLEASE BRIEFLY SUMMARIZE YOUR RESPONSE TO THE COMPANY'S REBUTTAL TESTIMONY.

A. In large part, the dispute over the execution of the Company's hedging strategy is based on the products that are available in a sufficiently liquid or competitive market to execute transactions. While the Company argues the gas "market" is sufficiently liquid well beyond four years (but only for annual strips), it simultaneously characterizes the electricity "market" as being rather limited in product availability beyond the prompt year.

The Company's rebuttal testimony must be read very carefully, as it does not adequately define the word "market," which is used throughout the Company's testimony. The Company also uses this same word to mis-characterize ICNU's direct testimony. I was deposed in this case by PGE on August 2, 2011. A complete copy of my deposition transcript is attached as ICNU/109. I stated numerous times during my deposition that the focus of my analysis was transactions with a relatively long tenor—i.e., generally going beyond 36 months. For transactions such as these, the "market" in my view is the available number of counter parties willing to enter into a long-term transaction in either the gas or electricity markets.

In contrast, the Company alleges non-standard gas products (anything other than an annual or seasonal strip) would have a "material" or "significant" or "high" premium associated with the product while providing absolutely no evidence to support these statements. These products are available and used by other utilities beyond the prompt year in the western North America gas and electricity markets. As a result, the Company's assertions should be disregarded.

The Company also alleges that my hedging disallowance recommendation is based on hindsight or an after-the-fact analysis. I disagree. My recommendation is based on what should have been known at the time the Company executed the transactions it is seeking to place in rates in this proceeding. My disagreement goes more to the execution of the Company's Mid-Term Strategy ("MTS") rather than the terms of the strategy itself. As such, any Commission adjustment would not be considered a "hindsight" disallowance by the investment community.

The Company further alleges I did not consider their electricity hedges. I disagree. **[Confidential]** [redacted]

[redacted] **[Confidential]** The Company characterizes my recommended hedging strategy as being too programmatic and poorly described. As my deposition testimony demonstrates, this is not the case.

I recommend a hedging disallowance of **[Confidential]** [redacted] **[Confidential]** My review and consideration of the Company's rebuttal testimony in this proceeding has not changed my recommendation regarding the amount that should be disallowed. The Commission should adopt the ICNU recommendation on this issue.

<u>LIQUIDITY IN THE GAS AND ELECTRICITY MARKETS</u>

Q. PLEASE GENERALLY DESCRIBE THE DIFFERENT WAYS IN WHICH A UTILITY COMPANY CAN EXECUTE A TRANSACTION FOR EITHER GAS OR ELECTRICITY.

A. There are several ways in which this can be done. Transactions can be executed through a commodity exchange such as the New York Mercantile Exchange ("NYMEX") or the Intercontinental Exchange ("ICE") if the product being sought is available on the exchange. Transactions can also be done through a broker that brings together or connects two parties (a buyer and a seller) for a specific transaction based on the products posted by the broker. Also, there can be direct bilateral negotiations for a product between just the buyer and seller. Finally, transactions can be executed as the result of a request for offers or an auction process whereby the buyer has announced the product(s) it wishes to acquire or sell. In all cases, however, agreements are generally already in place between the various parties in order to execute the transaction in a timely manner. Exhibit ICNU/110 provides a list of the counter parties that PGE was authorized to trade with under PGE's MTS. ICNU/110, Schoenbeck 4.

Q. HOW WOULD A UTILITY DECIDE UPON WHICH TYPE OF TRANSACTION TO EXECUTE?

A. It would be dependent upon the specific product being either purchased or sold by the utility and the transactional cost related to the product. If, for example, it was a purchase of a standard short-term gas hedge transaction (prompt year monthly or seasonal or quarterly product), NYMEX or ICE would be the likely choice as the product would be available and likely heavily traded. As you go beyond two or three years, the utility would most likely transact the product through a broker or bilateral arrangement. In these instances, the pre-arranged bilateral negotiated transaction may still be cleared through NYMEX or ICE. Contemporaneous documents indicate that PGE planned to implement the MTM through the broker and bilateral market. Exhibit 406C, Lobdelle-Outama/34.

Q. IN YOUR PREFILED DIRECT TESTIMONY IN THIS PROCEEDING, WHAT TYPES OF TRANSACTIONS OR MARKETS WERE YOU REFERRING TO?

A. As my direct testimony focused on the Company's gas hedges with tenors up to and well beyond 48 months, I was referring to transactions that would have been executed generally through a bilateral transaction process (which may or may not have been done using a broker). During my deposition, I noted the importance of clarifying the exact time period being discussed when using the word "market" as it may be interpreted very differently by different people.

Q. HAS THE COMPANY MISCHARATERIZED YOUR TESTIMONY BY THE MANNER IN WHICH IT HAS MIXED DIFFERENT MARKETS?

A. Yes. The Company testimony in Exhibit PGE/400, Lobdell-Outama 27-31 is, at best, extraordinarily misleading. For example, at Lobdell-Outama/29, lines 1-11, the Company asserts I have contradicted myself ("direct conflict") with regard to the availability of quarterly or monthly products beyond the prompt year. In making this erroneous assertion, the Company is contrasting a portion of my testimony addressing off-peak electricity prices posted on ICE with my testimony addressing the availability of quarterly and monthly gas products available in the longer-term bilateral gas market. The Company's assertion that I have contradicted myself by comparing statements addressing two different markets and two different products is totally inappropriate. While the Company asserts the quarterly and monthly long-term products do not exist or would come at some unquantifiable premium, **[Confidential** [redacted]

[redacted]

[redacted] **[Confidential]** Southern California Edison ("SCE") Q3 call option auction which I will describe in greater detail latter in my testimony. It sought a Q3 product for three different time periods with associated tenors of 20, 32 and 45 months. This auction was monitored by an independent evaluator who concluded there was a "robust market response" to the three auctions. **[Confidential]** [redacted]

[Confidential]

Q. CAN THE COMMISISON CONDUCT A SIMILAR ANALYSIS WITH REGARD TO THE ELECTRICITY MARKET?

A. Yes. PGE's testimony would lead the Commission to believe the electricity market is illiquid beyond the prompt year for quarterly products including Q2. PGE fails to clarify the "market" it is referring to in these assertions. It is my experience that the longer-term electricity market (up to four years from the prompt month) is very similar to the gas market for this same period of time. In fact, in large part it is the same counter-parties that are willing to execute transactions in both markets. PGE asserts "past the prompt year, liquidity for Q2 power is scarce" See Exhibit PGE/400, Lobdell-Outama/30, lines 13-17. **[Confidential]** [redacted]

[redacted]

[Confidential]

Q. HOW CAN YOU DETERMINE IF THIS TYPE OF BILATERAL MARKET IS LIQUID OR COMPETITIVE ENOUGH FOR EXECUTING TRANSACTIONS WITH A TENOR UP TO OR BEYOND 48 MONTHS?

A. There is little publicly available data on these types of transactions. The assessment has to be based on the number of parties participating in these transactions and the number of products they are willing to offer. As the tenor of the sought after transaction increases, the number of offered products will drop off due to the risk, uncertainty and cost arising from the length of the transaction.

To illustrate this concept, consider the results of recent solicitations done by SCE for gas products. In a December 2010 auction, SCE sought third quarter ("Q3") financial gas call options for up to 50,000 MMBTU/month for the years 2012 (tenor of 20 months), 2013 (tenor of 32 months) and 2014 (tenor of 45 months). SCE received 49 offers (from 14 bidders) for the 20 month tenor product, 28 offers (14 bidders) for the 32 month tenor product and 21 offers (13 bidders) for the 45 month tenor product. SCE conducted an auction in June 2011 for a fixed for floating swap auction for: 1) a 6 month product for January 2013 through June 2013 (up to 140,000 MMBTU/day; 24 month tenor); 2) a 12 month product covering July 2013 through June 2014 (up to 30,000 MMBTU/day; 36 month tenor); and 3) an 18 month product for July 2014 through December 2015 (up to 10,000 MMBTU/day; 48 month tenor). SCE received 42 offers

(13 participants) for the 24 month tenor product, 34 offers (14 participants) for the 36 month tenor product, and 20 offers (12 bidders) for the 48 month tenor product. While neither of these SCE auctions sought products with tenors beyond 48 months, it does illustrate the drop-off in product availability as the tenor of the transactions goes further out in time. The drop-off in market participants needs to be considered when entering into longer-term transactions (up to 48 months and beyond). The SCE swap auction volume also illustrates the more typical manner of hedging lower volumes the further it is from the prompt month. Of the 180,000 MMBTU/day of swaps, 61% of the volume was for transactions with a tenor of 24 months, 26% of the volume had a tenor of 36 months, and only 13% of the volume had a tenor of 48 months.

Q. **[Confidential]** [redacted] **[Confidential]**

A. [redacted]

[redacted] **[Confidential]**

Q. IN YOUR VIEW, WAS THERE A LIQUID MARKET FOR QUARTERLY OR MONTHLY GAS HEDGES IN 2007 FOR THE 2012 RATE YEAR?

A. Yes.

Q. DID PGE DO A MARKET ASSESSMENT FOR ITS HEDGES [Confidential] [redacted] **[Confidential]**

A. In response to ICNU data requests, PGE asserts it is continually monitoring the "market." Exhibit ICNU/110, pages 11-12; 33-34; 36-37 (containing the response to ICNU data requests 66, 88 and 90). An examination of these and other data responses (including the requests directed at Mr. Stoddard's rebuttal testimony), makes it very clear that the primary "market" PGE and Mr. Stoddard is using for much of this activity and analysis is ICE. Exhibit ICNU/110, pages 27 and 29, PGE responses to ICNU requests 82 and 84. As I have previously noted, this exchange is used more relating to near term transactions than for longer term transactions. Also, as I previously noted, ICE is not the only exchange to clear prearranged bilateral transactions. NYMEX provides this service as well. In fact, for the two previous SCE auctions I describe for the series of Q3 call options and swaps, the parties had agreed to clear these transactions through NYMEX. The mere fact that PGE and Mr. Stoddard cannot find select products "traded" on the ICE platform does not mean the products do not exist or are illiquid. I have shown these products are "traded," but by counter parties, **[Confidential]** [redacted]

[redacted] **[Confidential]**

<u>PGE'S ALLEGED HINDSIGHT ADJUSTMENT</u>

Q. THE COMPANY ALLEGES ANY COMMISSION DISALLOWANCE WILL BE VIEWED BY THE INVESTMENT COMMUNITY AS A "HINDSIGHT" ADJUSTMENT. (PGE/300, POPE-VALACH/7-8). DO YOU AGREE?

A. No. My criticisms are based on what should have been known by the Company with regard to electricity and gas markets when the transactions at issue in this proceeding were executed. As such, this is no different than reviewing any other cost item submitted for inclusion in the revenue requirement determination. For example, a commission could approve placing the costs of a five-year power purchase agreement ("PPA") in the rates for year one. However, just because the commission approved the agreement for year one does not mean that any subsequent cost associated with the agreement is deemed ever after to be reasonable. This is simply not the regulatory standard. The administration of a contract must be reviewed each and every year the Company is seeking cost recovery on it. This same standard applies to PGE's hedging transactions. PGE's claim that, because no party had previously objected to the transactions in dispute, they have already been deemed prudent by the Commission, is wrong. The issue can and should be decided now.

HEDGING EXECUTION

Q. THE COMPANY ALLEGES YOU DID NOT CONSIDER ITS ELECTRICITY HEDGES IN MAKING YOUR RECOMMENDATIONS. DO YOU AGREE WITH THIS ASSERTION?

A. No. I noted in my deposition that I had, in fact, reviewed the Company's financial hedges for electricity products. Attached as Confidential Exhibit ICNU/111 is a summary I prepared of the electricity hedges. **[Confidential]** [redacted]

Q. [redacted]

A. [redacted]

[redacted] **[Confidential]**

Q. PGE CRITICIZES THE ICNU HEDGING RECOMMENDATIONS AS BEING TOO PROGRAMATIC OR MECHANICAL. WHAT IS YOUR RESPONSE?

A. I explained in my deposition that the parameters I recommend were not absolute, precise values that had to be achieved. I noted a range could well be appropriate based on the instant conditions occurring at that time. I did state that the range should be relatively close—such as 15-25% for the out years. However, to quantify a recommended disallowance, I did use the recommended targets as precise values. This quantification should not be used to assert the recommended target values are rigid and precise as the Company is asserting in its rebuttal testimony.

<u>CONCLUSIONS</u>

Q. WHAT CONCLUSIONS HAVE YOU FORMED FROM YOUR REVIEW OF PGE'S REBUTTAL TESTIMONY?

A. PGE's implementation of its mid-term strategy **[Confidential]** [redacted]

[redacted]

[Confidential] My review and consideration of the Company's rebuttal testimony in this proceeding has not changed my recommendation regarding the amount that should be disallowed. The Commission should adopt the ICNU recommendation on this issue.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.