PUBLIC UTILITIES COMMISSION OF OHIO

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In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider	:	Case No. 14-1693-EL-RDR
In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority	:	Case No. 14-1694-EL-AAM

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DEPOSITION

of Karl R. Bletzacker, taken before me, Carolyn D. Ross, Registered Professional Reporter, and a Notary Public in and for the State of Ohio, at the offices of American Electric Power, 1 Riverside Plaza, Columbus, Ohio, on Monday, September 21, 2015, at 9:00 a.m.

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On behalf of the Sierra Club.

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On behalf of IGS Energy.

Bruce E. Weston, Ohio Consumers' Counsel
By Ms. Jodi Bair (via speakerphone)
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On behalf of the Residential
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On behalf of the Industrial Energy
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1 APPEARANCES: (Continued)

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9 On behalf of Ohio Manufacturer's
Association Energy Group.

10

ALSO PRESENT:

11

Steven Beeler, PUCO Staff;
12 Werner Margard, PUCO Staff.

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BLETZACKER EXHIBITS IDENTIFIED

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2 - 2013 Fundamental Forecast 41

3 - 2018/2019 RPM Base Residual Auction Results 79

4 - 2015 Fundamental Forecast 83

5 - Response to IGS Interrogatory 2-010 243

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1 Monday Morning Session,
2 September 21, 2015.
3 - - -
4 MR. CONWAY: This is Dan Conway again.
5 I thought we might just quickly take a poll of
6 everybody who's on the phone just to make sure we
7 have an accurate head count. Let me just tick off
8 the people who are here in Columbus in the conference
9 room: Joe Oliker, representing IGS; Chris Bzdok,
10 representing Sierra Club; myself, representing AEP
11 Ohio, and with me is the witness for the deposition,
12 Karl R. Bletzacker; and also the court reporter,
13 Carolyn Ross. And I have, my understanding, on the
14 phone is Matt Pritchard for IEU, Steve Beeler for the
15 staff, Jodi Bair for OCC, Justin Vickers for
16 Environmental Law & Policy Center, and Becky Hussey
17 from OMA Energy Group.
18 Is there anyone else on the phone?
19 MR. MURRAY: Yes, Dan. Kevin Murray
20 with IEU of Ohio as well.
21 MR. CONWAY: Thank you, Kevin. Anybody
22 else?
23 (No response.)
24 MR. CONWAY: Okay. I'll turn this over

in a second to Chris Bzdok.

Good morning. This is Dan Conway, on behalf of AEP Ohio representing the witness, Karl R. Bletzacker, at this deposition. We are here today in Case No. 14-1693-EL-RDR and Case No. 14-1694-EL-AAM, if I got that correctly, to take Mr. Bletzacker's deposition pursuant to an amended notice that was served on August 31st, according to my records, and time and place based on agreement of counsel.

Mr. Bzdok, I'll turn it over to you. It's your deposition.

MR. BZDOK: Thank you.

(Witness placed under oath.)

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KARL R. BLETZACKER,

being by me first duly sworn, as hereinafter certified, deposes and says as follows:

CROSS-EXAMINATION

BY MR. BZDOK:

Q. Good morning, Mr. Bletzacker.

A. Good morning.

Q. My name's Chris Bzdok, and I represent the Sierra Club. I'm helping them out in this case.

I have some questions for you that maybe

I'd like to start with some of the background and experience that you laid out at the beginning of your testimony. Do you have that with you today?

A. I do not.

MR. CONWAY: What is it that you're looking for?

MR. BZDOK: His direct testimony -- his amended direct testimony.

MR. CONWAY: You don't have an extra copy of it with you?

MR. BZDOK: No.

MR. CONWAY: All right.

MR. OLIKER: This is the May testimony?

MR. BZDOK: Yes.

THE WITNESS: I have my direct testimony in front of me now.

BY MR. BZDOK:

Q. Okay. At Page 1 of your direct testimony, you are discussing your experience, and you mention the management of the purchasing, interstate transmission and distribution of natural gas and power to both regulated and wholesale customers. Do you see that?

A. Yes, I do.

1 Q. Okay. The -- I just want to understand
2 a little bit. Are you talking about electric --
3 electricity where you say power?
4 A. That's correct.
5 Q. You go on to describe experience that
6 you have trading various types of natural gas
7 commodities and products; is that correct?
8 A. That's correct.
9 Q. Do you also have experience with trading
10 in the energy markets, the electric markets?
11 A. I have not traded financial instruments
12 personally in the electricity markets.
13 Q. You mention a number of instruments
14 relative to natural gas that you do have experience
15 trading; is that correct?
16 A. That's correct.
17 Q. And those include futures, swaps,
18 options, and also arbitrage opportunities; is that
19 correct?
20 A. No. That's not correct.
21 Q. Okay. Straighten me out.
22 A. What's your question?
23 Q. Tell me what's incorrect about it.
24 A. Arbitrage opportunities is not a

1 financial instrument, it is not a hedging instrument.
2 Q. Okay. When you were involved in --
3 well, let me back up.
4 So are you still involved in trading
5 natural gas instruments?
6 A. I -- in what time period?
7 Q. Are you still involved in it? Is that
8 part of your current job responsibilities?
9 A. No, it is not.
10 Q. Is it -- do your current job
11 responsibilities have any -- do they include any type
12 of arbitrage activity?
13 A. I need to have a better definition of
14 your interpretation of the word arbitrage.
15 Q. As you use it in your testimony at
16 Line 18 on Page 1.
17 A. Yes. As I use it in my testimony is
18 monetizing arbitrage opportunities primarily with
19 contract storage of natural gas.
20 Q. And is that part of your current job
21 responsibilities?
22 A. No.
23 Q. So these natural gas trading and
24 arbitrage activities, when did you cease engaging in

1 those?
2 A. Upon my employment with American
3 Electric Power, which would have been in October of
4 2005.
5 Q. So you were involved in those activities
6 from around 1990 to around 2005; is that correct?
7 A. Correct. That is correct.
8 Q. In carrying out those activities, what
9 type of information did you generally rely on?
10 A. That's a broad question. Could you be
11 more specific?
12 Q. Well, give me the highlights.
13 A. Well, primarily in the earlier time
14 period, I was looking at arbitraging indigenous
15 storage, storage that's located in Ohio. So
16 certainly the physical characteristics of those
17 storage fields, particularly in eastern Ohio, was an
18 important piece of information.
19 Secondly, the spreads between months or
20 seasons was an important piece of information.
21 Q. What do you mean by that?
22 A. The differences between summer and
23 winter prices; the difference between different
24 months' prices, which would give you the opportunity

to put gas in storage at a lower price, bring it out at a higher price.

Q. So as far as prices, you're talking about traded or commodity prices of natural gas?

A. Natural gas futures prices specifically.

Q. Okay. What other types of information did you rely upon in those activities?

A. The availability of pipeline capacity to transport natural gas to storage fields, and the ability to take it away.

Q. How about pending or future development trends relative to natural gas infrastructure?

A. What do you mean by "infrastructure"?

Q. Pipeline capacity.

A. The arbitrage opportunities that is referred to in our testimony is about what's available very nearby, so within the next heating season. So a future capacity would not enter into it.

Q. How about price forecasts, did those play a role in the experience you had that we've been discussing?

A. If we're wrapping the question around arbitrage opportunities using NYMEX futures

1 instruments, we are only looking at futures prices as
2 reported by the NYMEX.
3 Q. How about if we are talking about the
4 futures, swaps, and options-related activity?
5 A. The answer's the same.
6 Q. Your position now involves forecasting
7 for AEP and its affiliates; is that correct?
8 A. Well, the testimony says that my
9 responsibility is for the generation of a Long Term
10 North American Energy Market Forecast for AEP Service
11 Company.
12 Q. Do you still review or study aspects of
13 the natural gas market and natural gas development in
14 your current responsibility?
15 A. Yes.
16 Q. How so?
17 A. We are the recipient of many trade
18 publications, the work of several highly regarded
19 consultancies.
20 Q. Are those the consultancies you
21 mentioned by name in your testimony, Page 4 at the
22 top?
23 A. That's a partial list.
24 Q. Who else is on the list?

A. I can't recall all, but certainly Bloomberg, and I believe you'll find in interrogatories several trade publications that will give you a more complete list.

Q. What -- name a few that jump to mind.

A. Gas Daily, Energy Daily, Megawatt Daily.

Q. And what type of information do you rely on the trade publications for?

A. I would refer to -- the kind of information that I would rely on the trade publications for would be -- I would call that balancing information, information that can be used to help identify current activity, maybe be some loose insight into some future trends. It's not the source of our long-term forecast, but it certainly is an influence on our long-term forecast.

Q. There were several layers there, and I just want to explore each one of them. When you say "current activity," what kind of activity?

A. Let's refer to that in terms of a timeframe, and I'll call that -- I'll define that as the nearby, what is happening today, what is happening at the balance of the month, and maybe off into the next season -- heating season or cooling

1 season.
2 Q. Sure. When you say "what is happening,"
3 what are you talking about? Are you talking about
4 what's going on in the commodities market, what's
5 going on in terms of demand and use? Are you talking
6 about what's going on in terms of development,
7 pipeline, exploration, production? What do you mean?
8 Activity is a very general word, and I'm trying to
9 get some more specifics.
10 A. Yeah. I think the best way to define
11 that would be nothing is excluded. So all the
12 content that is provided by these external
13 consultancies and trade press, all of that is
14 absorbed and is -- is considered.
15 Q. So would that include all of the
16 information that I just enumerated when I was
17 exculpating -- excu- --
18 A. Yes.
19 Q. Anything I missed?
20 A. Oh, I'm sure there's lots that you
21 missed.
22 Q. Anything jump to mind?
23 A. Not at this time.
24 Q. Okay. How about future trends? You

1 mentioned future trends. Future trends relative to
2 what?
3 MR. CONWAY: Could you give us a
4 reference to where you say he -- he refers to future
5 trends?
6 MR. BZDOK: Yes. In his verbal answer
7 to me today.
8 MR. CONWAY: Okay.
9 THE WITNESS: Well, one future trend
10 would be natural gas pipeline infrastructure
11 development. For instance, the development of new
12 pipeline capacity from the Marcellus and Utica to
13 other markets.
14 BY MR. BZDOK:
15 Q. Anything else?
16 A. I'm sure there are many other future
17 trends.
18 Q. Sure, that you rely on that come to
19 mind.
20 A. I think the best way to respond would be
21 that nothing is excluded as opposed to something is
22 relied on. So anything that's happening in the
23 nearby, I am interested in, our group is interested
24 in knowing and following.

Q. Sure. And just for clarification, we were talking about future trends now, and I'm just trying to see if the answer's the same. So is the information that you're relying on from the trade publications and from the consultancies on an ongoing basis and doing this long-term forecast -- fundamentals analysis and forecasting, does that include production trends, storage trends, use and demand trends, trends on the commodities markets, all of that kind of thing?

A. It includes, but is not limited to, those things.

Q. Anything significant or major that comes to mind that I missed in my list?

A. Not at this time.

Q. How about trends relative to new or pending or future gas-fired electric generation, do you review or keep up with those as part of your forecast activity?

A. Yes.

Q. From the same types of sources of information we've been discussing?

A. Yes. But in addition, AEP has a wealth of experts in the generation of electricity. So, for

1 instance, the cost of new generation, wind, solar,
2 combined cycle, combustion turbine, and the future
3 costs of that new generation balanced by the
4 information we receive from consultancies and others
5 is a very helpful source; how much can be built in a
6 given year, what those costs would be, all important
7 sources.
8 Q. Do you study those trends, the ones
9 we've been talking about specifically relative to
10 gas-fired electric generation, within PJM or on a
11 broader scope, or both?
12 A. To be specific, we use the AuroraXMP
13 Energy Market Model, which then generates a future
14 view of generation build, and we certainly review
15 those model results.
16 Q. Let me follow up with you on that. You
17 mention the AuroraXMP Energy Model in your direct
18 testimony.
19 Let me backtrack for just a second. You
20 filed your original direct testimony in the fall of
21 2014, correct?
22 A. Subject to check.
23 MR. CONWAY: Let me just, for the
24 record, there was prefiled testimony submitted on

1 October 3rd, 2014, but that filing was replaced by
2 the filing subsequently made on May 15th, 2015. So
3 it's not his original testimony in the sense of
4 testimony that we had or will be presenting at the
5 hearing.
6 MR. BZDOK: Sure. So what I'm driving
7 at is if we refer to your direct testimony, unless
8 otherwise stated, we're referring to that May 2015
9 filing, is that a fair --
10 MR. CONWAY: That's correct.
11 MR. BZDOK: -- ground rule?
12 MR. CONWAY: Yeah.
13 MR. BZDOK: Okay.
14 MR. OLIKER: Can we go off the record
15 for a second?
16 (Discussion held off the record.)
17 BY MR. BZDOK:
18 Q. So you mentioned that AuroraXMP Electric
19 Market Model on Page 13 of your direct testimony,
20 correct?
21 A. That's correct, but it's first mentioned
22 on Page 3 as a primary tool.
23 Q. So just a couple more of these
24 preliminary questions, and we're going to come back

1 to the model.
2 To what extent -- well, strike that.
3 Do you use EIA information as part of
4 any of this analysis activity you've been discussing
5 today?
6 A. Yes.
7 Q. What information do you use?
8 A. The primary information that I use, not
9 to the exclusion of other information, is the
10 elasticity of supply.
11 Q. Can you elaborate on that?
12 A. The elasticity of supply for our use is
13 the change in demand or the change in quantity
14 divided by the change in price. So to the extent
15 that natural gas prices increase as demand increases,
16 that ratio, that elasticity, is important as we feed
17 back the results -- the preliminary results from
18 Aurora and generate new prices to be considered by
19 Aurora for electric dispatch.
20 Q. So in that elaboration, are you
21 referring to historic or actual EIA data as opposed
22 to EIA forecasts for the future?
23 A. Primarily referring to forecasts.
24 Q. Do you use or rely on EIA data in any

other way relative to your current responsibilities?

A. Yes.

Q. How else?

A. Well, it probably is best to break the -- that answer down into two parts. The first part would be the archive of historical data. The EIA is the source for actual gas use, actual power use, unit productivity, all historical information is available from the EIA. Their forecasts, primarily contained in their Annual Energy Outlook, contains all their views of not just the actual projected prices, projected demand, but also you can derive what the relationships are between demand, supply and price to understand how -- how those interact.

Q. That's the elasticity concept you were just describing?

A. That's correct.

Q. So historic info as well as the forward-looking info from the outlook?

A. That's correct.

Q. Okay. How about -- how about energy market forwards, do you rely on those in any way as part of your current activities?

A. No.

Q. Do you review them at all?

A. Yes.

Q. Why do you -- why don't you use them in any way?

A. Forwards or futures -- exchange-traded futures in particular, as even outlined in my bio, I have considerable experience in the utilization of those instruments -- are not for the purpose of projecting a future spot price. They're where a willing buyer and seller come together because they are comfortable selling or they're comfortable buying a particular commodity for many reasons that we couldn't know.

Also to follow up on the notion of this arbitrage activity, people use futures to hedge the spread between, say, summer and winter and natural gas heat rate spreads, many different things that are well beyond just the -- some projection that don't include some projection of what the future spot price of gas or of what power would be.

Q. So these uses of -- well, let me backtrack.

You're using futures and forwards essentially synonymously; is that correct?

1 A. Correct. I'll use those as a synonym
2 here.
3 Q. Do you have a preferred term?
4 A. Futures.
5 Q. So these characteristics of futures
6 trading that you just described, how do they -- in
7 what way do they render that data unsuitable for
8 projecting future spot prices? And I'm really
9 looking for the -- what I'm driving at is
10 directionally, do they distort them high, do they
11 distort them low, do they distort them -- do they
12 impute more variability than actual? How do they --
13 in what way do they render futures unsuitable for
14 projecting spot prices some time from now?
15 A. I guess the answer really is in the
16 corollary to that, in that there is no way in which
17 they do project future prices except for the
18 extremely nearby. Upon settlement, futures prices do
19 represent the spot price.
20 But beyond settlement, they don't
21 represent what the spot price or are they intended to
22 represent what the spot price will be in the future.
23 They represent a future buyer's and seller's comfort
24 in the purchase or the sale of that commodity for

1 whatever their needs may be.
2 Q. They represent the aggregation of what
3 you just said among many buyers and sellers, correct?
4 A. I don't think I understand the question.
5 Q. You said they -- I was just following up
6 on your phrasing there. You said they represent a
7 buyer's and a seller's comfort level with some
8 arrangement in the future. And I'm just clarifying
9 with you a given strip of futures prices represents
10 the aggregation of many of those transactions, right?
11 A. No.
12 Q. Okay. How is futures -- how are futures
13 prices aggregated?
14 A. I -- I --
15 Q. Are they -- are they aggregated for
16 periods of trading activity, for example?
17 A. Your premises of the question is --
18 doesn't allow it to be answered.
19 Q. Do futures prices in your experience, in
20 reviewing them as part of your current
21 responsibilities, do they tend to be high relative to
22 future spot prices?
23 A. No.
24 Q. Do they tend to be low relative to

1 future spot prices?
2 A. No. But let me give an example.
3 The March 2012 natural gas futures
4 contract traded somewhere between $1.85 and $14.30.
5 That trading range is so wide, I don't know that
6 anyone could say that that represents any clarity as
7 to what the spot price actually would turn out to be.
8 Q. You pulled some numbers direct from your
9 head. Can you give them to me again, a dollar?
10 MR. CONWAY: Could you read the answer,
11 please?
12 (Record read back as requested.)
13 BY MR. BZDOK:
14 Q. Why did you give me an example from
15 March 2012? Why did you pick that time period?
16 A. Well, first of all, there are numbers
17 that I have committed to memory. Secondly is there
18 is a widespread of futures prices that were exhibited
19 at the New York Mercantile Exchange, or NYMEX. And
20 the purpose is to show that that wide trading range
21 did nothing to indicate what the ultimate spot price
22 of natural gas would end up being in 2012 -- March of
23 2012.
24 Q. Was March of 2012 an unusual time period

on the gas trading market?

A. You'd have to define unusual for me, please.

Q. What was going on -- what kind of trends or characteristics were impacting the gas market in March of 2012?

A. The only one that comes to mind is that it was a warm winter. Natural gas prices can be very volatile relative to weather, and it was a warm winter.

Q. So storage was high?

A. That's correct.

Q. Any trends relative to production at that time?

A. Not that I recall.

Q. Would you agree the market was being influenced in a significant way at that time by what was going on with shale-related extraction as a new phenomenon?

A. Well, these are futures contracts, and I don't believe that they are for the express purposes of predicting future spot prices. So I have no opinion about how shale enters into a willing buyer and seller's decision to trade futures contracts.

1 Q. If market energy forwards are not
2 suitable for predicting futures spot prices, why do
3 you review them?
4 A. They are very helpful in knowing what's
5 going on in the nearby, what next month looks like,
6 maybe even what a few months out looks like. Of
7 course, we put together the Long Term North American
8 Energy Market Forecast out to 2030, 2040, 2050.
9 Q. How about -- I'm switching topics now.
10 How about just broadly speaking on the
11 electric side, how about auction results, do you
12 review those?
13 A. I'm aware of auction results, but
14 they're not an input to our model.
15 Q. Is that answer true as to -- what type
16 of auction results do you review or are you aware of
17 as part of your current responsibilities?
18 A. Well, we're certainly aware of capacity
19 values in different ISOs, probably specifically the
20 PJM capacity auction results, but that's only a
21 matter of interest and it doesn't affect the output
22 of our modeling.
23 Q. Why is it a matter of interest?
24 A. It's part of my responsibilities to be

1 knowledgeable and interested in all the energy
2 activities in our jurisdictions and across the United
3 States.
4 Q. Any other type of auction activity on
5 the electric side that you review or stay aware of in
6 your current responsibilities?
7 A. None that come to mind currently.
8 Q. How about market energy forwards -- or
9 futures if you prefer?
10 A. Please rephrase the question.
11 Q. Do you review or rely upon or stay aware
12 of market energy forwards in your current
13 responsibilities?
14 A. We certainly are aware of market energy
15 forwards for power, gas, fuels.
16 Q. Sure. And I'm specifically asking about
17 power at this point. By your nod, you're confirming
18 that your previous answer does apply to those,
19 correct?
20 A. Not necessarily. Rephrase the question
21 again and I will give a response.
22 Q. Sure. In what way do you make use of
23 market energy forwards in your current
24 responsibilities?

A. General awareness is the way in which we use market energy forwards.

Q. You don't rely upon them in any specific way in your forecasting or analysis or modeling; is that correct?

A. That's correct.

Q. And why is that?

A. Because, as I've stated earlier, forwards, or futures, do not provide a reliable or useful or intended view of futures spot prices.

Q. And generally in your experience, similar question as for gas, do market energy forwards tend to run high, low, or too wide of a range? In what way do they tend to deviate from futures spot prices that makes them unsuitable?

A. There is no tendency that can be characterized as uniquely high, uniquely low.

Q. In your experience, do market energy forwards -- strike that.

Can you give me an example like you did for gas of a specific instance you're aware of which in your judgment indicates that market energy forwards would be unsuitable for the purpose of projecting future prices?

1 A. No example comes to mind similar to the
2 natural gas example that I've given you, which
3 doesn't mean that one doesn't exist. And there --
4 and the suitability of forwards as a projection of
5 future spot prices comes from the -- the nature of
6 the participants. They are not here to guess or
7 project and achieve success because they predict a
8 future price, but rather to achieve some other need
9 that we just aren't -- we would not know.
10 Q. You prepared a Fundamentals Forecast
11 that was used by Dr. Pearce as supporting information
12 for his forecasts of the revenues and costs of the
13 PPA rider; is that correct?
14 A. That's correct. But to be specific, we
15 create a Long Term North American Energy Market
16 Forecast that is used ubiquitously across the
17 company. It's the same in every jurisdiction, it's
18 the same for strategic planning, it's the same
19 forecast that you will find in every area in which
20 AEP operates or projects or offers its future
21 forecast.
22 Q. And so when you say "across the
23 company," you mean all of the affiliates and
24 subsidiaries of AEP?

1 A. That's correct.
2 Q. And you do have knowledge that it was
3 relied on by Dr. Pearce for his testimony in this
4 case?
5 A. I do.
6 Q. And your testimony describes it
7 including -- strike that.
8 Your testimony references the forecasts
9 used by Dr. Pearce for the purpose I stated, correct?
10 MR. CONWAY: Do you have a reference to
11 the testimony that you're using, to Mr. Bletzacker's
12 testimony?
13 MR. BZDOK: Uh-huh. Sure.
14 BY MR. BZDOK:
15 Q. So I'm -- I guess I'm following up on
16 Page 2 at the bottom where you say, "My testimony
17 will explain," and you have three enumerated items,
18 the first one, "that a Long Term North American
19 Energy Market Forecast" -- or Fundamentals
20 Forecast -- "has been created and it was provided to
21 AEPSC's Resource Planning Group for use in further
22 analyses."
23 What is your understanding of what those
24 analyses were?

1 A. Well, the further analyses undertaken,
2 to my understanding, by the service company's --
3 Service Corporation's Resource Planning Group was
4 they modeled AEP-specific units. Which ones they
5 modeled I am not familiar with or how they did that,
6 but they did modeling of the performance of AEP
7 units.
8 Q. For what purpose?
9 A. That group does modeling of AEP's units
10 for many purposes.
11 Q. For what purpose relative to this case?
12 A. I don't -- I can't speak for the
13 Resource Planning Group. They don't do any modeling
14 specific to a case, they just do modeling of the
15 units' performance in a given energy environment --
16 market environment.
17 Q. So in this case you filed testimony
18 about your forecast, correct?
19 A. That's correct.
20 Q. And do you have an understanding of what
21 other witnesses in this case utilized the information
22 you described?
23 A. Not a full understanding, no.
24 Q. What's your partial understanding?

1 A. Well, there are many customers, so to
2 speak, consumers of the Long Term North American
3 Energy Market Forecast, sometimes referred to as a
4 Fundamentals Forecast. And to the extent that the
5 Resource Planning Group, as identified on Page 2,
6 utilized this ubiquitous forecast was to model
7 units -- now, those -- that unit's performance.
8 How they were -- what units that were
9 requested to model, what purpose those modeling
10 results would be used is not part of my
11 responsibilities.
12 Q. What's your understanding of what the
13 case in which you filed testimony is about?
14 A. I don't think I have a complete
15 understanding of the -- and not full knowledge of
16 the -- the case in which my testimony is here to
17 support. I have to leave that for other witnesses.
18 Q. What is your partial understanding?
19 A. AEP has offered a set of electric
20 generating units that will provide many benefits to
21 its stakeholders, and this case was put together in
22 support of those efforts.
23 Q. Is that all you know?
24 A. Subject to further consideration, that's

all I have.

Q. I just want to be really precise here about your answer. You said, "That's all I have." Is that all you know about this case?

A. My response is that your question impresses me as being too wide. I'd be more interested in answering a specific question you may have about a facet of the case and whether I know it or not rather than a general question about what I know about the case.

Q. Do you know what the PPA rider is?

A. I do.

Q. Do you know whether there was a forecast or a series of cases of -- let me try that again.

Do you know whether there were projections made as to the revenues and costs associated with the PPA rider?

A. Yes, I do.

Q. Do you know what witness did that work?

A. Subject to check, it would be Witness Pearce.

Q. Do you know if Witness Pearce relied on any of the forecast information from you, directly or indirectly, in doing his work?

A. I believe that he did.

Q. Did you ever meet or communicate directly with Dr. Pearce about your work or his use of your work relative to what he's doing in this case?

A. Yes, I did.

Q. What was the nature of those discussions?

A. Generally the nature of those discussions is clarification and further understanding of the forecasts and the -- you know, the premises behind the forecasts.

Q. Was that sort of a one-way chain of communication where he was asking you questions and you were providing him with answers, or was it a two-way where you had questions for him as well?

MR. CONWAY: At this point, I'm going to object to the line of questions. To the extent that you're asking for us to divulge what our approach or our design to the case is and what our -- you know, our internal work product is about the case, I object to it, and conversations that are undertaken pursuant to or at the request of counsel, I think, are out of bounds. So I'll ask you to move on.

1 BY MR. BZDOK:
2 Q. Were the discussions that we've been
3 describing, were those held with legal counsel?
4 MR. CONWAY: They are -- that's not --
5 that is not the breadth or the scope of the
6 objection. Discussions that are held in connection
7 with the design of the case at the direction of
8 counsel or at the request of counsel are just as
9 confidential and privileged as ones where the counsel
10 is in the room. So I would just advise the witness
11 not to divulge communications that were undertaken in
12 connection with the case at the request or at the
13 direction of counsel, whether or not counsel are in
14 the room with you.
15 MR. BZDOK: Sure. Are you instructing
16 him not to answer my question about whether counsel
17 were present in these discussions?
18 MR. CONWAY: Yes, I am. I don't think
19 that that -- I don't think that that covers the
20 breadth of the protection as to whether or not
21 counsel are present in the room.
22 MR. BZDOK: I understand that.
23 MR. CONWAY: I think --
24 MR. BZDOK: But this is a foundational

1 question. I'm just trying to understand whether this
2 was -- these discussions involved counsel or not.
3 MR. CONWAY: Well, I'll instruct him not
4 to answer that. You can ask him what he knows about
5 the use of his -- of his results in connection with
6 the case, that's fair game. I think if you've got
7 questions about how Dr. Pearce used what he provided,
8 the witness for -- that is available to you for that
9 purpose is Dr. Pearce.
10 MR. OLIKER: I'm not sure the people
11 that are involved in the conversation is
12 confidential. Whether you're getting into the
13 discussions that may have occurred, I think that may
14 be a different issue. He should answer that
15 question.
16 MR. CONWAY: I'll stand with what I
17 said, Joe.
18 MR. OLIKER: Likewise, he could ask the
19 witness whether or not counsel advised him to have
20 that discussion with Mr. Pearce. Seems to be your
21 objection.
22 MR. CONWAY: I'll stand by the
23 objection. We're not going to drill into the work
24 product of our case through the deposition.

1 MR. OLIKER: We're not doing that.
2 MR. CONWAY: Well, I respectfully
3 disagree.
4 BY MR. BZDOK:
5 Q. Well, we'll revisit that if we need to.
6 Let me ask you this: Did you seek or
7 request any information from Dr. Pearce relative to
8 what you did in this case?
9 A. No.
10 Q. Your testimony states on Page 4 that the
11 Fundamentals Forecast you go on to discuss in this
12 testimony was prepared in the fourth quarter of 2013;
13 is that correct?
14 A. That's correct.
15 Q. Do you recall more specifically, like,
16 what month perhaps it was prepared?
17 A. Your question asks for when it was
18 prepared, and you're asking me to identify a specific
19 month. I can't answer that. It takes more than a
20 month to prepare these forecasts. It may take up to
21 six months to fully vet and prepare these forecasts
22 to be a credible forecast.
23 Q. Do you recall in what month it was
24 completed?

1 A. I don't. I do not. I think the
2 testimony that states the fourth quarter of 2013 is
3 certainly accurate.
4 MR. BZDOK: Could you mark that as
5 Exhibit 1, please?
6 (EXHIBIT MARKED FOR IDENTIFICATION.)
7 BY MR. BZDOK:
8 Q. I'm handing you what's been marked as --
9 MR. CONWAY: Actually why don't we do
10 it -- let me think about that. I think in the past,
11 the intervenors have marked them as exhibits of the
12 party who's introducing it. I mean, you can mark it
13 whatever way you'd like to, but if others are going
14 to use the exhibit for their purposes you might
15 consider whether it makes sense just to call it
16 Sierra Club Exhibit No. 1.
17 MR. OLIKER: Either that or we just have
18 to keep going in order. I think that works probably
19 the easiest to just call it Sierra Club 1.
20 MR. CONWAY: It's your pleasure.
21 MR. BZDOK: If it's my pleasure, let's
22 call it Bletzacker Deposition Exhibit 1.
23 MR. OLIKER: Anybody else that marks an
24 exhibit, just make sure that you go the next number

after that so that we don't have two Bletzacker 1s.

MR. CONWAY: Two conventions, all right.

MR. OLIKER: Yeah.

BY MR. BZDOK:

Q. So this is the cover page for our Request for Production of Documents that was responded to by you, correct?

A. Correct.

Q. And the question refers to Long Term North American Energy Market Forecast from 2010 until today, correct?

A. Correct.

Q. And --

MR. PRITCHARD: I hate to interrupt, this is Matt Pritchard on the phone. For those of us not in the room, could you identify the discovery response?

MR. BZDOK: Yes. I apologize. I always forget that there -- I've only done this once before here, but I forget that people are on the phone. So just for the record, the document I've handed you is Request for Production of Documents and an answer, RPD-5-055, and then also a supplemental response September 1, 2015; is that correct?

1 THE WITNESS: That's what I have in
2 front of me, that's correct.
3 MR. CONWAY: Just for completeness, if
4 it's not already complete, the discovery request is
5 an Ohio Consumers' Counsel discovery request, so it's
6 RPD-5-055 submitted by Ohio Consumers' Counsel.
7 MR. BZDOK: Thank you for the
8 clarification.
9 BY MR. BZDOK:
10 Q. So in your testimony on Page 2 at the
11 bottom, you refer to a Long Term North American
12 Energy Market Forecast, and then you -- in
13 parenthesis you call that the Fundamentals Forecast;
14 is that correct?
15 A. That's correct.
16 Q. So those terms are essentially
17 synonymous; is that correct?
18 A. They are synonymous.
19 Q. So the Long Term North American Energy
20 Market Forecast -- Forecasts that were produced in
21 this response included the fourth quarter 2013
22 forecast that you discuss in your testimony; is that
23 correct?
24 A. That's correct.

1 Q. So I am going to --
2 MR. CONWAY: Are you finished with Depo
3 Exhibit 1 for Bletzacker at this point?
4 MR. BZDOK: For the moment.
5 MR. CONWAY: Okay.
6 (EXHIBIT MARKED FOR IDENTIFICATION.)
7 MR. BZDOK: I'm going to ask that you
8 mark this as Bletzacker Deposition Exhibit 2. For
9 the record, I'm going to state that this is a printed
10 copy of one of the Excel spreadsheets that was
11 included in that response to the OCC request,
12 specifically a spreadsheet, the name of which was
13 "OCCRPD-5-055_Supplemental2013H1_LTF_FT_Base_Nominal-
14 _2013_10_21," and I'm also going to show you the
15 electronic version on my computer just in case you
16 need to look at an electronic to verify anything.
17 MR. CONWAY: So what you're -- you are
18 assuring us is that the document -- the printed copy
19 of the document, as well as the electronic image of
20 the document that you've provided are copies of
21 information that you received from the company?
22 MR. BZDOK: Yes. And let me be more
23 specific. The printed copy that I have had marked as
24 Exhibit 2 and -- is the second -- is the information

on the second sheet of that Excel spreadsheet, which I think refers to -- is it annual prices?

THE WITNESS: Annual prices-nominal.

MR. BZDOK: Okay.

MR. OLIKER: Can I ask for one more clarification, I think it's on the record, but is a short way of saying this is the 2013 Fundamental Forecast that he talked about in his testimony just so we're all clear?

MR. BZDOK: That's my question. So go ahead and answer.

MR. OLIKER: Thank you. Got too technical for me.

THE WITNESS: Yes, it is.

BY MR. BZDOK:

Q. One more question with the computer.

A. Sure. I can move.

Q. The -- what's the significance of the date in the name -- in the name of the document, the electronic document?

A. Referring to the last several digits --

Q. Set it down.

A. That's okay. Last several digits of the file name, that refers to the date that it was

1 released and published on our intranet.
2 Q. Okay. After the first appearance of the
3 date of the year 2013, there is an abbreviation H1.
4 Do you see that?
5 A. I do see that.
6 Q. What does H1 stand for?
7 A. The first half.
8 Q. First half of what?
9 A. 2013.
10 Q. And what's the significance of that?
11 A. That's when research for this case was
12 under -- began to be undertaken.
13 Q. Okay. And there is also -- so LTF, I
14 assume, stands for long-term forecast?
15 A. That assumption is correct.
16 Q. What does FT stand for?
17 A. It's an internal moniker that stands for
18 fleet transition.
19 Q. What does that mean?
20 A. It's been used in our forecasts for --
21 probably since 2010, subject to check. It really has
22 no meaning other than just identifying the transition
23 of the fleet just over time. This is a time of
24 considerable fleet transition across the United

1 States.
2 Q. And by "fleet," you're referring to the
3 generating fleet?
4 A. That's correct.
5 Q. In your direct testimony, you identify
6 on Page 3 a number of items that this forecast
7 includes, correct?
8 A. If you're referring to the testimony
9 that begins at Line 12, that's correct.
10 Q. And those nine enumerated items, at
11 least some of them correspond with headings for
12 multiple columns in the annual prices sheet; is that
13 correct?
14 MR. CONWAY: What sheet are you
15 referring to, Counsel?
16 MR. BZDOK: The annual prices sheet,
17 which is the one that's printed out.
18 MR. CONWAY: That's Bletzacker Depo
19 Exhibit 2?
20 MR. BZDOK: Correct.
21 MR. CONWAY: And can I have the question
22 reread then? Thank you.
23 (Record read back as requested.)
24 THE WITNESS: I will agree that the

1 items identified in my testimony on Page 3 are
2 included in the Long Term North American Energy
3 Market Forecast. The sheets that you have in front
4 of me are for nominal dollars only, not real as
5 described in the forecast. They are for annual
6 prices, not monthly prices as described in the
7 testimony.
8 So with those exceptions and perhaps
9 more, what you've put in as Bletzacker 2 does contain
10 those captions identified on Bletzacker testimony,
11 Page 3.
12 BY MR. BZDOK:
13 Q. Is there another long-term forecast for
14 2013 that you have produced that includes the dollars
15 in real instead of nominal and the prices in monthly
16 rather than annual as you described?
17 A. The forecast for 2013 that we have
18 produced has a tab in the spreadsheet that you've
19 shown me for monthly values. You've also asked about
20 real and nominal dollars. The inflation factors are
21 given in one of the -- either in one of the further
22 tabs or -- it's given in the spreadsheet.
23 Q. So just to be -- when you referred to
24 monthlies, you're referring to the two sheets,

1 forecast peak, off-peak, nominal and forecast night,
2 weekend nominal; is that correct?
3 A. That's correct.
4 Q. And when you're referring to the
5 inflation factors, that's the GDP scenarios sheet?
6 A. That is correct.
7 Q. Okay. I want to talk to you a little
8 bit more about a few of those items that you
9 enumerated in your testimony at Page 3. The first
10 one of those is the monthly and annual locational
11 power prices. Those prices were an input or an
12 output of the model?
13 A. An output.
14 Q. Was the output adjusted in any way?
15 A. There are several preliminary model runs
16 or better described as iterations that feed back, for
17 instance, increased or decreased fuel burns based on
18 price, but the final Long Term North American Energy
19 Market Forecast is not modified in any way after it's
20 become an output of the AuroraXMP Model.
21 Q. What are the -- I just want to maybe
22 streamline this a little bit. Those power prices are
23 the ultimate output of the model; is that correct?
24 A. That is correct.

Q. All of the other inputs and modeling that's done generates those prices as essentially the final product; is that correct?

A. That's correct.

Q. The power prices that are produced are presented in a number of different nodes; is that correct?

A. Please define node for me.

Q. Okay. Well, looking at the exhibit --

MR. CONWAY: This is Exhibit 2?

MR. BZDOK: Yep.

BY MR. BZDOK:

Q. There are these headings above the On-Peak, Off-Peak designations for PJM - AEP Gen Hub, SPP, ERCOT North, ERCOT South, ERCOT West, what are those?

A. Well, the United States is broken down into the Eastern Interconnect, the ERCOT, and the Western Electricity Coordinating Council. So these are prices specific to nodes within those areas.

Q. And these are the nodes served by AEP-owned generation; is that correct?

A. No. This forecast is -- is created across the United States, which would, of course,

1 include areas in which AEP owns generation.
2 Q. Why were these particular five nodes
3 selected for presentation in the forecast?
4 A. Those are areas of which are the
5 greatest interest to the AEP Service Corporation.
6 Q. And why is that?
7 A. The Service Corporation has many
8 downstream uses, integrated resource planning, asset
9 valuation, strategic planning, and our model
10 certainly has output at many locations across the
11 United States. These are the ones that are most
12 requested.
13 Q. Are one or more of these particularly
14 pertinent for AEP Ohio?
15 A. Yes.
16 Q. Which one or more?
17 A. Certainly power prices regarding the AEP
18 Gen Hub.
19 Q. Any others?
20 A. Natural gas prices regarding the
21 Columbia Gas Transmission Pool, Columbia Gas
22 Transmission Delivered, and certainly all the other
23 supporting documentation regarding inflation factors,
24 emissions value, and others.

1 Q. And just to clarify, when you mentioned
2 Columbia Gas Transmission Pool and the Columbia Gas
3 Transmission Delivered, you're referring to headings
4 under Natural Gas, TCO Pool and TCO Deliv?
5 A. That's correct.
6 Q. You also prepared some projections --
7 give me a second.
8 On Page 10 of your direct testimony, you
9 describe some projections that you prepared looking
10 at a five percent increase in load and a five percent
11 decrease in load, correct?
12 A. That's correct, to support the notion of
13 asymmetry.
14 Q. Do you know which of those
15 projections -- five percent increase, five percent
16 decrease, or base -- which of those projections
17 contains data closest in quantity to current market
18 energy forwards?
19 A. Not without further review.
20 MR. BZDOK: Can we go off the record?
21 (Discussion held off the record.)
22 (Recess taken.)
23 MR. CONWAY: Okay. We're going back on
24 the record now.

BY MR. BZDOK:

Q. Mr. Bletzacker, before we took a break, I was asking you about the base high load and low load cases that you had prepared. Do you recall that discussion?

A. I do recall the discussion.

Q. Do you have any opinion, based on your experience and responsibilities, as to which of those cases is the most likely of the three?

A. Yes, I do.

Q. What is your opinion?

A. The base.

Q. And why is that?

A. That represents the assembly of the best available data at the time of the forecast, and represents normalized weather, the best load forecast at the time, all coming together to be the representation of what is -- from that point in time what future power prices in all of the supportive data will be.

Q. I want to talk to you about No. 2 in your enumerated list of nine items on Page 3, coal prices. Were coal prices an input or an output of the model?

A. An input.

Q. Was the input adjusted in any way? Well, first, what was the source of the input?

A. The primary source of influence for the input -- we are the -- we're the group that is responsible for the input. It is our input. The primary source for the influence on that input is WoodMackenzie.

Q. Elaborate on that. What did they do versus what did you do in-house?

A. WoodMackenzie provides a very detailed mine-mouth coal price projection complete with assumptions unique to WoodMackenzie. We create a long-term forecast for coal that then has to be adjusted as coal burns either increase or decrease depending on other factors, gas prices included, environmental mitigation certainly. So it's a very iterative process that results in coal prices being uniquely in AEPSC forecast as the result of iterations of the Aurora Model.

Q. So just to be clear I understand, WoodMackenzie gives you a mine-mouth forecast, correct?

A. As to other consultancies.

1 Q. And WoodMackenzie is the primary one you
2 rely on?
3 A. That is correct.
4 Q. And then AEPSC adjusts prices provided
5 by WoodMackenzie based on these trends you just
6 identified?
7 A. That's correct. It also includes those
8 elasticities that we had discussed earlier, to what
9 level prices increase or decrease according to demand
10 result from a consistency -- consistent use of those
11 elasticities.
12 Q. How do transportation costs get
13 included?
14 A. You're referring to transportation costs
15 of coal?
16 Q. Yes.
17 A. Well, certainly that is the -- in the
18 gas business we would call that the basis
19 differential from the mine-mouth to the consumer or
20 the electric generating plant; so that's in addition
21 an adder to the mine-mouth price. Of course, it's
22 specific to each location, each generating location.
23 Q. What's the source of the adder amounts?
24 A. We create that.

Q. Using what information?

A. We create that by starting with EIA data that is available to us through a service called Ventyx Velocity Suite, which identifies each of roughly 20,000 units across the United States, what coals they consume, whether they receive it by barge, by rail, by truck.

We are then in a position to look at the differentials between what each electric generation unit paid at their unit versus what the mine-mouth price was to develop a set of differentials -- price differentials, we'll call them transportation differentials. We then develop consistencies throughout all those differentials and apply them to each of the 20,000 units.

Q. Item No. 3 on your enumerated list, locational natural gas prices, including Henry Hub, are those prices an input or an output?

A. They're an input.

Q. And what is the source of that input?

A. Certainly the input is iterated. So the input changes based on those elasticity numbers as burns increase or decrease through different runs -- continuous runs of the model. The primary input,

1 though, is one that comes from a -- I'll call it a
2 consensus view or at least beginning with the views
3 of consultancies such as CERA, PIRA, and others.
4 MR. OLIKER: I'm sorry, could I have the
5 last part of his answer read back after PIRA?
6 (Record read back as requested.)
7 MR. OLIKER: PIRA and others, that's
8 all, okay.
9 MR. BZDOK: CERA, PIRA, and others.
10 BY MR. BZDOK:
11 Q. What do those consultancies provide you
12 with?
13 A. Those consultancies provide us with many
14 services, a North American energy market service, a
15 North American gas service. WoodMackenzie, of
16 course, provides us with a coal service. So there's
17 a general service that's provided to them that can
18 include natural gas prices and the scenarios around
19 their conclusion that those prices are a good
20 forecast.
21 Q. Okay. So relative to this Item 3, the
22 natural gas input, am I understanding you correctly
23 that CERA, PIRA, and others provide you with gas --
24 locational gas price forecasts, and you use those and

1 adjust those to become the input?
2 A. No. They provide us with a consensus
3 view, because in order to understand natural gas
4 prices you have to understand natural gas demand.
5 And the Aurora market will, through iterations,
6 provide changes to those demands.
7 So we don't use any consultancies'
8 natural gas forecast as an input, but rather we look
9 at a consensus view iterated through our model -- use
10 of our model to generate the AEP view.
11 Q. And I'm just trying to understand,
12 consensus view of what, of future prices or of some
13 other information?
14 A. Future prices and other information.
15 Q. What other information?
16 A. Certainly demand in the case of natural
17 gas, residential demand in its growth, industrial
18 demand in its growth, commercial demand in its
19 growth, and electric generation demand in its growth,
20 also the likelihood of exports of natural gas through
21 LNG.
22 Q. Anything else?
23 A. Nothing comes to mind now.
24 Q. And you mention in your -- when you

1 enumerate that item, you mention locational prices as
2 well as Henry Hub, correct?
3 A. That's correct.
4 Q. And in an earlier answer, you referred
5 to -- referencing your Deposition Exhibit 2, you
6 referred to a couple of gas -- under the gas forecast
7 column headings that included the abbreviation TCO;
8 is that correct?
9 A. That's correct.
10 Q. Are those the locational nodes you're
11 referring to in your testimony?
12 A. That's one of them, yes.
13 Q. TCO Pool and TCO Delivered are one node,
14 just with a basis added?
15 A. No.
16 Q. What are -- is that one node or two?
17 A. Two.
18 Q. Other than Henry Hub, TCO Pool and TCO
19 Delivered, any others?
20 A. Subject to check in our Aurora Model,
21 there are in excess of 25 pricing -- locational
22 values of natural gas across the United States and
23 Canada. We just report on the ones that are most
24 requested.

1 Q. And relative to what's presented in this
2 2013 Forecast, are Henry Hub, TCO Pool and TCO
3 Deliver the ones that are most pertinent to AEP Ohio?
4 A. Yes.
5 Q. You -- early in our discussion today,
6 you talked about some of your ongoing review and
7 awareness of natural gas trends. Do you recall that
8 discussion?
9 A. Yes.
10 Q. What -- just tell me your general
11 understanding of the trends on -- the trend of
12 natural gas development at this point in Ohio.
13 A. I think a discussion of the trends of
14 natural gas development should include what is
15 structural and what is cyclical. Certainly weather
16 is cyclical. Certainly a downturn in the oil prices
17 and oil exploration, as shown in rig counts that have
18 dropped in excess of 60 percent, is cyclical and will
19 return to another normal, a new normal.
20 Structurally, though, we make an
21 assumption of weather that is normal equal to a
22 30-year average. So trends would indicate what is
23 happening structurally, which means the inherent
24 price of natural gas at the benchmark Henry Hub, and

then all of its different locations.

In Ohio, in the Appalachian area with development of Marcellus and the development of the Utica, prices are well below the Henry Hub. So the trends that you describe, such as pipeline capacity to transport that gas away from this congested Utica and congested Marcellus area is worthy of following.

Q. What do you mean, "worthy of following"?

A. You've asked for trends, and that is an example of a trend is that affects the basis differential and locational value of natural gas, the development of pipelines in our area.

Q. Am I understanding you correctly that you believe that as pipeline capacity continues to expand to take gas out of Ohio, that the locational price of gas in Ohio will increase? Am I understanding correctly?

A. That's the general consensus.

Q. Is natural gas development in Ohio currently at a -- an all-time peak?

A. No.

Q. When has it been higher?

A. Pre-Thanksgiving or Christmas of last year.

Q. How far down is it from then?

A. National rig counts have dropped 62 percent for gas and oil-directed rigs. I couldn't -- I don't know the numbers for Ohio and Pennsylvania specifically.

Q. How about storage in Ohio, are there any trends there, structural or cyclical, that you're aware of?

A. Structural would mean the working capacity of storage. I am unaware of changes in storage capacity in Ohio.

Q. How about cyclical?

A. Cyclical inventory levels are reported every week by the EIA, and those levels are of such importance that they contribute to the winter volatility of natural gas prices. When inventory -- according to my testimony, when inventory is low and demand is up, you can have some prolonged spikes in price as witnessed by the polar vortex.

Q. What's your understanding of storage in Ohio currently relative to prior times?

A. You'd have to clarify that on -- with some specifics.

Q. Sure. Is storage in Ohio at an all-time

1 peak?
2 A. That's a wide question. Could you give
3 me some more specificity on the question?
4 Q. Do you have any understanding of how
5 storage in Ohio of natural gas in 2015 compares with
6 previous years in terms of quantity?
7 A. No.
8 Q. Do you have any knowledge of how storage
9 nationally compares in 2015 to prior years in terms
10 of quantity?
11 A. Please define quantity.
12 Q. The quantity of gas in storage in total.
13 A. There's working gas, there's base gas.
14 You haven't defined which quantity you're referring
15 to.
16 Q. Give me an answer for both.
17 A. No, I'm unaware.
18 Q. Of either?
19 A. Of either.
20 Q. Well, why did it matter if it was
21 working or base?
22 A. To define whether it's structural or
23 cyclical.
24 Q. Working is cyclical and base is

1 structural?
2 A. Correct.
3 Q. Do you know roughly how much gas is in
4 storage nationally, 2015?
5 A. The working capacity is about four
6 trillion cubic feet.
7 MR. OLIKER: Could I have the question
8 read back again?
9 (Record read back as requested.)
10 MR. OLIKER: That's a different
11 question.
12 BY MR. BZDOK:
13 Q. Do you know how much of that is being
14 utilized?
15 A. Your question is too broad.
16 Q. What can you tell me?
17 MR. CONWAY: Objection. That's even
18 broader.
19 BY MR. BZDOK:
20 Q. Do you know how much working gas is in
21 storage nationally?
22 A. I answered the question earlier, it's
23 four trillion cubic feet.
24 Q. Do you know how much -- are you aware of

1 another time period where there's been that much
2 working gas in storage nationally?
3 A. Yes.
4 Q. When was that?
5 A. Last year.
6 Q. Are you aware of another time when there
7 was more?
8 A. No.
9 Q. Are you aware of how much base gas is in
10 storage nationally?
11 A. No.
12 Q. Are you aware of any trends in Ohio --
13 well, let me back up.
14 Have you, in your experience, both when
15 you were involved in the trading business and
16 subsequent to your employment with AEP in this
17 forecasting work, are you aware of how -- of whether
18 increased gas development corresponds in any way or
19 impacts new gas-fired electric generating capacity
20 coming online?
21 A. Did you use the word whether? Spell the
22 word whether.
23 Q. Whether, w-h -- I'm --
24 A. Please.

Q. Go ahead. Go ahead.

A. I'd like you to reread the question or restate the question, please.

Q. Let me try to shorten it up.

A. Thank you.

Q. In your experience, have you observed any impact of increased development of natural gas on development of natural gas-fired electric generating capacity?

A. Natural gas-fired electric generating capacity is a long-lived asset. It naturally shouldn't be related to the near term price of natural gas or increase natural gas development unless it supports the long-term economics of that asset. So I am unaware of any nearby development of natural gas immediately affecting the development of natural gas electric generation.

Q. How about long-term forecasts of gas generation -- sorry, of gas development, how about long-term forecasts of natural gas prices, have you observed any impact of changes in long-term natural gas price forecasts and the development of new natural gas-fired electric generation?

A. Yes.

1 Q. What have you observed?
2 A. In my testimony on Page 4, I identified
3 why are natural gas prices important in a
4 fundamentals analysis. Essentially the testimony
5 says that natural gas prices are a key component in
6 determining the supply stack, or merit order, and
7 that merit order will have a direct effect on the
8 development of new assets which would likely include
9 or exclude electric generating -- electric generation
10 fueled by natural gas.
11 Q. Are you observing that in recent years
12 to be occurring?
13 A. I'm -- I am certainly observing that
14 gas-fired generation has increased across the United
15 States over recent years.
16 Q. And I'm just clarifying: When you say
17 "gas-fired generation," are you talking about the
18 utilization of existing resources, or are you talking
19 about the development of new resources, or both?
20 A. I'm talking about both.
21 Q. Okay. Relative to that subject, what
22 are your observations about proposed gas-fired
23 generation in Ohio specifically?
24 A. I don't have observations about Ohio

1 specifically. Certainly the model responds -- the
2 AuroraXMP Electric Market Model builds and retires
3 generation depending on all of its inputs. It
4 doesn't assign that generation uniquely to a state,
5 but more to what you would call a node or a -- an LMP
6 area, which may cross several states. So we can't
7 define it down to a state; so I have no observation
8 about this particular state.
9 Q. How about this particular RTO, PJM?
10 A. Yes. We have a model output that
11 identifies existing gas generation and new build gas
12 generation within PJM.
13 Q. Are you -- is the model showing,
14 relative to forecasts you've done in prior years,
15 more new natural gas-fired electric generation coming
16 online in light of long-term natural gas forecasts of
17 recent years?
18 A. I haven't done a study comparing it to
19 prior forecasts.
20 Q. I'm asking if you have a sense of it
21 from the work you do.
22 A. The sense would be that -- is much due
23 to carbon regulation, natural gas generation will be
24 on the increase compared to further years -- or, past

1 years.
2 Q. Page 5 of your direct testimony, you --
3 in the first question and answer, you're talking
4 about natural gas prices during this polar vortex of
5 2013 and 2014, correct?
6 A. Yes. But also holistically how gas
7 prices are affected by storage levels that are well
8 below normal and continuing cold weather.
9 Q. You make the statement, starting on
10 Line 8, you say, "It is likely, in the event of a
11 colder-than-normal heating season, that natural gas
12 spot prices could exceed $8 per mmBtu." Do you see
13 that?
14 A. Yes, I do.
15 Q. Did the -- do you have an understanding
16 about whether the winter of 2014/2015 was colder than
17 normal?
18 A. Not that I recall.
19 Q. Did you have any observation of whether
20 natural gas spot prices in the winter of 2014/2015
21 exceeded $8 per mmBtu?
22 A. Not that I recall.
23 Q. You don't know either way or you don't
24 recall them exceeding that price?

A. I don't recall. I don't recall them exceeding that price.

Q. In the next sentence of that same testimony that we looked at starting on Line 9 you say -- referring to the 2013/2014 you say, "In fact, they exceeded $30 per mmBtu in many locations that winter." Do you see that?

A. I do.

Q. What locations?

A. Particularly the northeast comes to mind.

Q. Did they exceed that price anywhere in Ohio in your observation?

A. I don't recall.

Q. You don't recall them exceeding that price or you don't recall any information either way?

A. I don't recall any information either way.

Q. What is your memory or understanding of the impact of the polar vortex of 2013/2014 on natural gas prices in Ohio?

A. My recollection is that when storage levels went below 80 percent of working capacity for a given period, prices rose dramatically. A graph

of which is presented in the testimony on Page 7, Figure 2. So prolonged winters are -- prolonged -- a prolonged increase in heating degree days combined with storage inventory levels below 20 percent of normal resulted in exponential pricing.

MR. OLIKER: Could I have the question read back again?

(Record read back as requested.)

MR. OLIKER: Okay. Thank you.

BY MR. BZDOK:

Q. The X axis on this graph --

MR. CONWAY: In which figure are you referring to at this point?

MR. BZDOK: The one that the witness just answered about, Figure 2.

MR. CONWAY: Okay.

BY MR. BZDOK:

Q. The numbers on the X axis are deviations in billions -- in billion cubic feet from -- from what number?

A. From normal or five-year average inventory levels.

Q. So what -- what number is that roughly speaking?

A. Working capacity in the United States is roughly four trillion cubic feet, or 4,000 billion cubic feet. That's the working capacity that's available for use on day one, say November 1st. As the winter progresses, those inventories are either above normal or below normal. So the number of billion cubic feet above or below normal is identified on the X axis, and the related price, the Columbia Gas Transmission Pool, is located -- is on the Y axis.

Q. So am I understanding it correctly that the zero on the X axis is a number that changes as -- temporally?

A. Yes. To restate that observation, zero represents a normal inventory for that -- for a -- that particular period of time throughout the winter.

Q. Got it.

A. So it's a deviation from normal right or left.

Q. What is your understanding nationally about how natural gas prices trended over the winter of 2014/2015?

A. I -- I don't recall.

Q. Do you have any knowledge of how natural

1 gas prices trended during that winter anywhere in the
2 country?
3 A. No.
4 Q. Did you review that information in
5 connection with any forecasting work that you've done
6 since then?
7 A. No.
8 Q. Do you have any knowledge of any kind as
9 to how the natural gas industry responded in any way
10 to the polar vortex events of 2013/2014?
11 MR. CONWAY: Well, I'll object to the
12 form of the question. I think it's vague and
13 overbroad.
14 BY MR. BZDOK:
15 Q. I'm specifically interested in any
16 trends that you observed in your responsibilities
17 relative to any of the natural gas industry
18 activities that we've talked about, production,
19 storage, transmission, capacity, any of these things.
20 A. And you've been particularly interested
21 in the nearby trends; so I would like to offer that.
22 During the winter of 2014 and 2015, we
23 had a precipitous drop in rig count, 62 percent to
24 date; oil-directed rigs, which also produce

1 associated gas; natural gas-directed rigs, which also
2 includes those rigs that are looking also for
3 liquids, propane, butane, methane, as well as natural
4 gas.
5 And that precipitous drop in response to
6 prices, I'm sure, is a cyclical change that we'll
7 work through over a period of time. So certainly the
8 cyclical effect on the short-term part of this
9 long-term forecast and the associated rig count drop
10 is a trend, it's noticed, and it's considered.
11 MR. CONWAY: Are you finished with your
12 response?
13 THE WITNESS: Yes.
14 MR. CONWAY: Did someone just get on the
15 bridge or was that someone who left?
16 (No response.)
17 MR. CONWAY: I'll take that as it was
18 someone who left. Thank you. Go ahead.
19 BY MR. BZDOK:
20 Q. Have you observed any structural trends
21 in any natural gas industry activities such as those
22 we've discussed since the polar vortex of 2013/2014?
23 A. No structural changes in the natural
24 gas -- strike that.

1 Not of significance to change our view
2 of natural gas pricing in Long Term North American
3 Energy Market Forecast.
4 Q. What are the -- what is the trend or
5 trends you've observed that you do not feel are
6 significant?
7 A. I don't know, because they're not
8 significant.
9 Q. I want to go back to your enumerated
10 list on Page 3 and look at Item No. 7, capacity
11 values. Do you see that?
12 A. Yes, I do.
13 Q. By that do you mean -- are you using
14 that term in a sense that's different than capacity
15 prices?
16 A. No.
17 Q. So if I look at your Deposition Exhibit
18 2 --
19 A. Uh-huh.
20 Q. -- on the last page of the printout of
21 that annuals sheet, there is a heading for capacity
22 prices. Do you see that?
23 A. Yes. It isn't my last page, but I do
24 see the column.

Q. Maybe I'm missing a page.

MR. CONWAY: Can we go off the record for just a second?

(Discussion held off the record.)

MR. CONWAY: Back on the record.

BY MR. BZDOK:

Q. So on the record. I was confused for a moment, and the witness corrected me that capacity prices in Deposition Exhibit 2 are not on the last page. They're actually split between two pages, one for the AEP Gen Hub and one that's labeled SPP Cap; is that correct?

A. That's correct.

Q. And on the sheet, just for the record, they appear between data for heat rates and data for renewable energy subsidies; is that correct?

A. That's correct.

Q. Were capacity prices an input or an output of the model?

A. They are an output of the model.

Q. How were they prepared?

A. The model calculates the revenue required by marginal generating units not provided by energy revenue in order for them to remain as the

1 marginal units.
2 Put another way, if those marginal units
3 don't receive these capacity values, there's not
4 enough revenue from energy to -- there's not enough
5 revenue from energy to allow them to continue to
6 exist economically.
7 MR. PRITCHARD: This is Matt Pritchard
8 on the phone. Could I have the last question and
9 answer reread?
10 (Record read back as requested.)
11 BY MR. BZDOK:
12 Q. Why is the determination made that way?
13 A. Well, this is certainly the defined
14 output of the model's creator, but it is a -- an
15 important value because it represents the revenue
16 that's necessary to keep the marginal units available
17 for energy production. If those units don't receive
18 these payments, they would be retired.
19 Q. Capacity prices in the model -- strike
20 that.
21 Is that the way in which capacity prices
22 are actually set out in the functioning of the
23 market?
24 A. No.

1 Q. How are they set out in the functioning
2 of the market?
3 A. It's a function of the PJM RPM base
4 residual and other auctions.
5 Q. So why then is the method you described
6 from the model not inconsistent with -- strike that.
7 MR. CONWAY: Just a second. Did someone
8 just get on the bridge?
9 MR. MURRAY: Dan, this is Kevin Murray.
10 I had to drop off and now I'm back in.
11 MR. CONWAY: Okay. Thanks, Kevin.
12 BY MR. BZDOK:
13 Q. You told me earlier today when we were
14 talking about the information that you generally
15 relied on that capacity price auction information is
16 something that you remain aware of as a matter of
17 general interest. Do I recall that correctly?
18 A. Yes.
19 Q. But is not something that you use or
20 rely on directly in forecasting; is that correct?
21 A. That's correct.
22 Q. If capacity prices are actually set by
23 those auction results, why is that not a more
24 reliable indicator of at least near-term capacity

1 prices than the model method you described?
2 A. Keep in mind, this is a long-term energy
3 market forecast, extends out to 2030, 2040, 2050.
4 The PJM capacity auction is for a much shorter time
5 period, less than 2020.
6 To the extent that PJM values are less
7 than those generated by the AuroraXMP Model would
8 indicate those units could be at risk. It heightens
9 our awareness for -- to look for announced
10 retirements on those units and enhance our vigilance
11 on the -- the -- the continued operation of those
12 units.
13 Q. Two lines to follow up on that. First,
14 would you agree with me then that the auction prices
15 are a better indicator of capacity prices in the near
16 term prior to 2020 than the model results?
17 A. No.
18 Q. Why not?
19 A. They're an indicator of where the
20 auction and -- has been finalized, and they indicate
21 the payments that will be received. They're not an
22 indication of the value that those marginal units
23 need to receive to stay economically viable.
24 Q. They are a better indicator of actual

1 revenue that the units will receive than the model
2 forecast, correct?
3 A. That is correct.
4 Q. The model, as I understand it, does make
5 retirement decisions in the simulations that it runs,
6 correct?
7 A. Correct.
8 Q. How does the model make those decisions
9 relative to this capacity price subject we've just
10 been discussing?
11 A. When an auction result is known, we can
12 force the model to accept those as the payments due
13 to those units, and then it continues to run its
14 projections and report on the values that are
15 necessary for those marginal units to stay in
16 place -- in operation.
17 Q. You can do that. Do you do that when
18 you make the runs?
19 A. It's my understanding we do.
20 Q. And is that for purposes of simulating
21 retirements only or is that -- is the use of those
22 payments also baked into the ultimate power price
23 forecasts?
24 A. The capacity values have no direct

1 effect on the energy price values. There is a
2 secondary effect in that the fleet changes depending
3 on whether the capacity is sufficient.
4 Q. Do you have any knowledge of how
5 Dr. Pearce used the capacity prices from the
6 forecasts relative to his work on revenues and costs
7 of the PPA rider?
8 A. No.
9 Q. Do you have any knowledge of where
10 Dr. Pearce obtained capacity revenues from in
11 calculating the revenues and costs of the PPA rider?
12 A. No.
13 Q. As part of your work in reviewing
14 capacity auction information for purposes of general
15 awareness, did you review the results of the August
16 2015 PJM auction?
17 A. You said the August 2015 auction?
18 Q. By which I meant the auction conducted
19 August 2015 for -- is that sufficient clarification?
20 A. Yes. None of the modeling presented
21 here has any consideration of the results of that
22 auction.
23 Q. Sure. In terms of just your general
24 awareness as -- you described it as part of your

1 current responsibilities to be aware of that type of
2 auction information, did you review those results?
3 A. We did a cursory review of those
4 results, yes.
5 MR. BZDOK: Would you please mark that
6 as 3?
7 (EXHIBIT MARKED FOR IDENTIFICATION.)
8 BY MR. BZDOK:
9 Q. I'm going to hand you what has been
10 marked as Bletzacker Deposition Exhibit 3, which at
11 least at this point is the first three pages,
12 Executive Summary of a document called 2018/2019 RPM
13 Base Residual Auction Results, which we can provide
14 to parties on the phone. If they want to e-mail me,
15 Chris@envlaw.com, I can e-mail it to you at lunch if
16 I can find some wireless.
17 And I am also, for purposes of
18 completeness, if I didn't mention that, providing
19 your counsel with the entire 30-page document which
20 you may want to reference as well.
21 My question is whether or not this is
22 the -- these are the -- this document embodies the
23 results that you reviewed in a cursory fashion?
24 A. No. The cursory fashion just includes

1 only the price -- the clearing price.
2 Q. On Page 2 of this document that's been
3 marked as 3, there are clearing prices listed; is
4 that correct?
5 A. Yes.
6 Q. Do those clearing prices look familiar
7 from your review that you described?
8 A. No. My cursory review didn't include a
9 look to this level.
10 Q. What do you recall from your cursory
11 review about clearing prices from this auction?
12 A. The BRA residual auction clearing at
13 $166.
14 Q. Any other -- anything else?
15 A. Not that comes to mind.
16 Q. And just for the record, BRA is an
17 abbreviation for what?
18 A. Base residual auction.
19 Q. And the units were dollars per what?
20 A. Rest of RTO was $165 in dollars per
21 megawatt day, 166,000 -- 167,000 megawatts cleared.
22 Q. So that's more or less the number you
23 recall then?
24 A. Yes.

1 Q. How does that result compare to the
2 capacity prices in your 2013 Forecast for the same
3 time period?
4 A. I don't recall without any supporting
5 information. Would you like me to look that up for
6 you?
7 Q. Sure.
8 (Witness complies with request.)
9 A. I'm unable to provide that with the
10 Bletzacker 2 that's in front of me. Keep in mind
11 that the base residual auction clearing price is
12 for -- not for a calendar year, but for a May/June
13 year. Our forecast is for calendar year.
14 Q. Sure. And May/June, so that's May of
15 2018 to June of 2019; is that correct?
16 A. Well, June to May, yes.
17 Q. So you say it correctly.
18 A. June 2018/May 2019.
19 Q. Is there any information in the
20 electronic version of your forecast that will allow
21 you to answer my question?
22 A. No. The calculation just involves the
23 calendarization of multiple auction results.
24 Q. What do you mean by "calendarization"?

A. The Long Term North American Energy Market Forecast results are expressed in a calendar year format. The base residual auction results are for that staggered year, partially one year, partially another year.

Q. So is it fair to interpolate that if your AEP Gen Hub capacity prices in 2018 were $199.74, and in 2019 were $215.54, can we be fairly confident in stating that your forecast was generally higher?

A. Yes.

Q. You also prepared a Fundamentals Forecast in 2015 that was provided to the Office of Consumers' Counsel; is that correct?

A. That's correct.

Q. And that 2015 Forecast is referenced in the supplemental response heading of Deposition Exhibit 1 as Supplemental 2015H1_LTF_FT_Base_Nominal_2015_04_24.xls, correct?

A. Subject to check, that seems correct.

Q. Do you want to see the electronic version to check?

A. No.

MR. BZDOK: I'm going to ask that this

1 document be marked as Bletzacker Deposition
2 Exhibit 4.
3 (EXHIBIT MARKED FOR IDENTIFICATION.)
4 MR. BZDOK: And for people on the phone,
5 I am providing the witness with a hard copy of the
6 same annual sheet from the Excel document that --
7 whose name I just read into the record.
8 BY MR. BZDOK:
9 Q. I will again invite you, if you wish, to
10 look at the electronic version of the document just
11 to verify whether this is the -- a sheet from the
12 document that you mention in the supplemental.
13 A. Yes. That appears to represent the
14 exhibit that I have in my hand identified as
15 Bletzacker 4.
16 Q. Now, this document -- the name of this
17 document ends with 2015_04_24; is that correct?
18 A. That's correct.
19 Q. And so like the 2013 Forecast, am I
20 assuming correctly, am I understanding correctly that
21 the date of release internally to AEP of this
22 forecast was April 24, 2015?
23 A. It was the day that it was completed.
24 It may have been released at a later date.

1 Q. Okay. Is the dating -- is the
2 nomenclature for this document different in any way
3 than the nomenclature for the 2013 document?
4 A. No. But I should clarify that, looking
5 for significance to that date, is that's when the run
6 was completed.
7 Q. Okay.
8 A. And then subsequently it would be
9 available for release.
10 Q. Okay.
11 A. Maybe not immediately, but subsequently.
12 Q. Okay. How often do you -- I just want
13 to be careful and use terminology that you're
14 comfortable with, and I'm not sure whether to say
15 update the forecast or issue a new long-term
16 forecast.
17 A. I'll accept those are synonyms.
18 Q. Okay. How often do you update the
19 long-term forecasts?
20 A. History has shown, at least over the
21 last five years, that that's been more than once a
22 year.
23 Q. Are updates done based on -- driven by a
24 change of circumstances, or are they done on some

1 regular interval?
2 A. Change of circumstances.
3 Q. What kind of changes of circumstances?
4 A. Long-term structural changes.
5 Q. What kind of long-term structural
6 changes led to the 2015 Forecast that's Deposition
7 Exhibit 4 being prepared and issued?
8 A. Well, the primary driver for 2015 being
9 issued was actually a short-term cyclical change --
10 so I should add that as a supplemental answer to your
11 previous question -- and that is the precipitous drop
12 in rig count in reaction to these low prices and an
13 expected rebalancing structurally of the natural gas
14 market.
15 Q. Any other changes, structural or
16 cyclical, that you can think of that led to this
17 forecast?
18 A. No.
19 Q. Were any of the methods used in
20 preparing this forecast different than the methods
21 used in the 2013?
22 A. No, none.
23 Q. Were any of the sources of inputs
24 changed compared to the 2013?

A. No.

Q. Were any of the types of adjustments made different?

A. Adjustments were certainly different. The types were not different.

Q. So is it fair to say that 4 -- Exhibit 4 is essentially an update of Exhibit 2 with more current information?

A. No.

Q. Okay. Why is that not fair to say?

A. Exhibit 4 is a new long-term forecast. It was affected by cyclical short-term natural gas events that do affect long-term natural gas prices. So it is a completely new forecast.

Q. When a long-term forecast is released within the company, what is the process by which that happens?

A. When a forecast has been fully iterated and checked within my organization to represent a forecast that is -- we refer to as being fitly joined, all the correlative features match, demand increases, price may change into what levels, environmental regulations are included.

We then present these forecasts to those

1 that initially have helped us generate some of the
2 inputs such as renewable values, maybe some very
3 near-term gas prices, certainly environmental
4 mitigation. And when that peer review is completed,
5 then it is released for all operating companies.
6 Q. Is the peer review within your
7 organization, or does it include other organizations
8 as well within AEP?
9 A. Within the organization.
10 Q. Okay. And just very specifically, by
11 organization we're talking about the forecast or
12 Fundamentals Analysis Group within AEPSC, right, or
13 are we talking about AEPSC?
14 A. We're talking about the subject matter
15 experts within AEPSC being presented the forecast
16 from the Fundamentals Analysis Group.
17 Q. So who from outside the Fundamentals
18 Analysis Group and within AEPSC is involved in those
19 peer reviews?
20 A. Certainly Environmental Policy and the
21 overall Environmental Group, Integrated Resource
22 Planning.
23 Q. Any others?
24 A. And others.

1 Q. Can you think of any names of
2 individuals who were involved in the peer review of
3 the 2015 Forecast from outside of the Fundamentals
4 Analysis Group?
5 A. Yes, I can.
6 Q. Who?
7 A. With regard to Environmental Policy, it
8 would be Scott A. Weaver. With respect to Integrated
9 Resource Planning, it would be Scott C. Weaver. Just
10 a coincidence.
11 Q. Any other names you can think of who
12 were involved in the peer-review process?
13 A. With respect to environmental -- or,
14 with respect to renewables, it would be Jay --
15 -a-y -- Godfrey.
16 Q. Anyone else you can think of?
17 A. Not at this time.
18 Q. Would anyone else who's a witness in
19 this case be involved in the peer-review process?
20 A. Subject to check, the answer would be
21 no.
22 Q. And so after it completes peer review
23 and everything's in order, how is it released in the
24 company?

A. It's placed on an intranet site and accessible to all AEP employees.

Q. Is there some type of notification that goes out to people -- to AEP employees that it's available on that site?

A. No official notification.

Q. Is there an unofficial type of notification?

A. Usually the process is there's a request, if there has been a change in the fundamentals, to please pass that on, usually a request at that point. Of course they're pointed to the intranet site at that point. So, no, there is no unofficial.

Q. Just complete your sentence.

A. There is no unofficial release of a Long Term North American Energy Market Forecast, just the official release, and we're willing to answer any questions that anyone within the company would have about it, including whether it's available or not.

Q. How do the -- just generally, directionally, how do the power prices in the 2013 and 2015 Forecast compare?

A. We have both of these as exhibits in

1 front of us. Would you like me to do the comparison
2 for you?
3 Q. Sure.
4 A. Generally power prices are lower in the
5 most recent forecast.
6 Q. How about same question for gas prices?
7 A. Generally gas prices are lower in the
8 nearby, but then not as low, but lower further on.
9 Those generalizations should be checked with exact
10 differentials between forecasts, though.
11 Q. Do you want to do that using the
12 electronic documents or do you stand by your answer?
13 A. I think my generalization is accurate.
14 Q. Do you have any knowledge generally and
15 directionally about how the lower prices -- lower
16 power prices in the 2015 Forecast would tend to
17 impact the costs and revenues in the PPA rider
18 analysis that Dr. Pearce was doing as you understood
19 it?
20 A. No.
21 Q. Same question about the gas prices, any
22 knowledge?
23 A. No knowledge.
24 Q. Did you ever discuss -- let me use a

1 different word. Did you ever communicate with
2 Dr. Pearce about the 2015 Forecast?
3 MR. CONWAY: Once again, I'll object and
4 instruct the witness not to answer regarding internal
5 discussions that might or might not have happened
6 here in the preparation of the case.
7 MR. PRITCHARD: This is Matt Pritchard
8 on the phone. Just for the record, I disagree with
9 your work product objection, and may or may not be an
10 issue during my cross later.
11 BY MR. BZDOK:
12 Q. Just to complete our record, did you
13 ever communicate with any witness in this case about
14 the 2015 Forecast?
15 MR. CONWAY: And I'll make the same
16 objection with the same instruction.
17 BY MR. BZDOK:
18 Q. In your testimony filed May 15, 2015,
19 why did you not discuss the 2015 Forecast?
20 A. It hadn't been completed at that point.
21 Q. I thought we indicated that it had been
22 at least completed on -- by April 24, 2015.
23 A. Full completion is when I go through
24 peer review and is ready for release. It wasn't

1 ready for release.
2 Q. How do you know?
3 A. Because largely I'm the author.
4 Q. Well, you told me earlier that you
5 weren't sure what date it was actually released,
6 correct?
7 A. That's correct.
8 Q. You -- you I think indicated that --
9 that April 24, 2015, would have been when it was at
10 least finalized internally, right?
11 A. The best way to typify that would be
12 that the final model run was completed. There's
13 significant work that needs to be done beyond that.
14 Q. And you were aware that the final model
15 run had been completed since you were the author,
16 correct?
17 A. Yes.
18 Q. Okay. Did you indicate to anyone in the
19 preparation of your testimony that the modeling for a
20 new forecast with different results had been
21 completed prior to your filing?
22 MR. CONWAY: Objection. I assume you're
23 asking whether he -- whether he discussed it with
24 others internal to the company and the working group

1 that was -- is involved in the litigation of this
2 case. So, again, I object and with the same
3 instruction not to respond.
4 MR. BZDOK: My question, for the record,
5 is with anyone at all.
6 MR. CONWAY: And my response is the
7 same.
8 MR. BZDOK: And you're instructing him
9 again not to answer?
10 MR. CONWAY: If you're asking him if he
11 discussed -- if he discussed the circumstances with
12 someone external to the company, then you can ask him
13 that question, but not internal, not with me, not
14 with the other people working on the project, the
15 case, no.
16 MR. BZDOK: I'm asking did he discuss it
17 with anyone whatsoever.
18 MR. CONWAY: And once again, I'm
19 instructing him not to answer to the extent that what
20 you're including in your question is those who are
21 involved in the case.
22 BY MR. BZDOK:
23 Q. Did you discuss it with anyone external
24 to the company?

1 A. No.
2 Q. If you don't know what date the 2015
3 Forecast was released, how do you know that it was
4 released after the filing of your testimony?
5 MR. CONWAY: And I'll object to the
6 question. I don't believe that's the form that is
7 correct or the premise of it is correct, but you can
8 answer to the best of your ability.
9 THE WITNESS: Restate the question,
10 please.
11 MR. BZDOK: Can you read it back?
12 (Record read back as requested.)
13 THE WITNESS: Because I would have
14 included it in my testimony if it had been released
15 prior to this date.
16 MR. BZDOK: This would be a good time to
17 break for lunch if you guys want to take a quick
18 lunch.
19 MR. CONWAY: Okay.
20 MR. BZDOK: I've been working off an
21 eight-page outline, and I'm on Page 6.
22 MR. CONWAY: Okay. So we'll take a
23 break now until -- it's now 10 after noon. I'd say
24 to give everybody an opportunity to get something for

lunch, we probably should take an hour if that's okay with you.

MR. BZDOK: Doesn't matter to me.

MR. OLIKER: That's fine.

MR. CONWAY: Okay. We'll see you back around 1:00 o'clock then on the bridge. I'm going to disconnect the bridge now, and I'll re-establish it right at 1:00 o'clock. Thank you.

(Luncheon recess taken.)

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Monday Afternoon Session,
September 21, 2015.

- - -

MR. CONWAY: Good afternoon. This is Dan Conway again. Could those on the conference bridge announce themselves?

MS. BAIR: Jodi Bair, on behalf of OCC.

MR. PRITCHARD: Matt Pritchard, on behalf of IEU Ohio.

MR. VICKERS: Justin Vickers, on behalf of Environmental Law & Policy --

MR. CONWAY: Hold on one second. Okay. I got Jodi, Matt and Justin so far. Go ahead.

MR. MARGARD: And you have Vern Margard and Steve Beeler for staff.

MR. CONWAY: Steve Beeler, Vern, okay.

MR. MURRAY: Kevin Murray.

MR. CONWAY: Okay. That was Kevin that just announced?

MR. MURRAY: Yes.

MR. CONWAY: Okay. How about -- how about Becky Hussey, is Becky on the call?

(No response.)

MR. CONWAY: Okay. Here at AEP's

1 offices where the deposition is occurring live we
2 have Joe Oliker, on behalf of IGS; Chris Bzdok, on
3 behalf of Sierra Club; myself, Dan Conway, on behalf
4 of AEP Ohio; the witness, Karl Bletzacker; and the
5 court reporter, Carolyn.
6 So we're ready to go forward whenever it
7 is your pleasure, Chris.
8 MR. BZDOK: It would be my pleasure.
9 BY MR. BZDOK:
10 Q. Good afternoon.
11 A. Good afternoon.
12 Q. I have a few miscellaneous issues to
13 clean up with you if I can.
14 The first is Page 7 of your testimony,
15 the very last line, you make a statement,
16 "Consequently, Ohioans can expect to contend with the
17 'volatile consequences of abnormal weather's effect
18 on energy prices'." Do you see that?
19 A. Yes, I do.
20 Q. Who are you quoting? Who or what are
21 you quoting?
22 A. I am quoting certainly my interrogatory
23 question on Line 14, Page 5.
24 Q. Got it. Page 12 of your direct

1 testimony, you make a statement at the bottom of the
2 page, "In the short run, depending upon the length of
3 time new-build generation is put in service and
4 existing units are retired, the elevation and
5 increased volatility of electricity prices will be
6 related to the area's transmission congestion." Do
7 you see that?
8 A. Yes, I do.
9 Q. Do you need a minute?
10 A. I'm fine. Thank you.
11 Q. Is that situation factored into your --
12 incorporated into your forecast in any way?
13 A. No. To be specific, there are no hasty
14 retirements of coal-fired electric generation
15 considered in the forecast in any way.
16 Q. You had testified before we took the
17 break that there -- in the modeling there was a --
18 the model was being set to force capacity revenues to
19 conform to auction results during the near term
20 period for which the auction results were available;
21 is that correct?
22 A. That's subject to check, whether we
23 include the capacity values as a result of the base
24 residual auction for the model to accept that. So

1 subject to check, the answer is yes.
2 Q. Okay. And that then identifies units as
3 being at risk, is that correct, if they have capacity
4 revenue which is less than what the model determined
5 they need to receive for capacity?
6 A. I'm not sure if this question is coupled
7 with the earlier question, but in general the answer
8 would be to the extent that the capacity values that
9 are indicated in the Long Term North American Energy
10 Market Forecast are below what revenues are actually
11 received from those units, it would be logical to
12 conclude that they would be at risk for further
13 generating ability.
14 Q. When you say revenues received by those
15 units, you mean revenues received for capacity under
16 the methodology in the model, correct?
17 A. That is correct.
18 Q. And I think you also said that when that
19 does happen, when there is that shortfall or that
20 discrepancy that you referenced, that then there is
21 some type of close watching of those units. Do you
22 recall some kind of a discussion like that?
23 A. I do.
24 Q. And elaborate on that. Are you talking

about watching them within further progressions in the model or something else?

A. Well, to clarify, to the extent that a market does not provide sufficient capacity revenue to allow new-build generation, the fleet will change in the model. And when we take a look at low -- seemingly low capacity prices in a particular area, PJM as an example, that does put units at risk.

We always pay close attention to press releases and any indication of plant retirements, announcements, perhaps sales, and include that in the near term part of our forecast, whether those units should be included or not included in our 20,000 plus units that we monitor to create these long-term prices.

MR. CONWAY: Did someone just get on the call?

THE WITNESS: Yes. This is Rebecca Hussey from OMAEG.

MR. CONWAY: Okay. Thank you, Rebecca.

BY MR. BZDOK:

Q. Does the model simulate in future years the retirement of units as part of this changeover of the fleet you described?

A. Yes. One of the model's outputs is the retirement of certain units, the building of units, and I believe details are provided in one of the interrogatories.

Q. Are the retirement simulations specific to units, or are they just raw capacity numbers?

A. At -- to my level of understanding the granularity at least includes retirement down to the -- borrow a phrase -- down to the nodal level, down to the ISO.

Q. I'm just trying to understand your prior -- your last answer. Down to nodes within the ISO or down to retirements in PJM, retirements in MISO?

A. Down to nodes within the ISO. As an example, the AEP Gen Hub would be considered a subset of PJM.

Q. Okay. In your most recent forecast, does the model simulate retirement of capacity within the AEP Gen node in, say, the next 10 years?

A. I don't know, but we did answer a data request that did show retirements by type, I believe, in -- at least to the PJM level.

Q. So as far as the AEP Gen node, you don't

1 have any knowledge, understanding on this topic?
2 A. I don't have any knowledge at this time,
3 no.
4 Q. Page 13 of your direct testimony,
5 starting on Line 11 you make a statement, "Generally,
6 incumbent generating units with little remaining
7 depreciated value are resistant to retirement and
8 have an economic advantage over new entrants because
9 much of their installation costs are sunk." Can you
10 elaborate on what you mean by that?
11 A. If you were to consider a model's choice
12 of building new generation and the economics
13 associated with the building of generation versus
14 continuing to rely on existing generation, existing
15 generation has that advantage in that the -- but for
16 efficiency, but for fuel prices and perhaps other
17 parameters, existing generation has an economic leg
18 up on new generation that would be built because, as
19 I said in my testimony, you don't have to overcome
20 the economic burden of those capital costs.
21 Q. So based on your answer to my question
22 earlier about what you knew about the model's
23 simulation of retirements in the AEP Gen node in the
24 next 10 years, and based on this discussion about

1 resistance of units -- incumbent units in the model
2 to retirement, is it fair to say that you're unaware
3 of any indication in your model of any specific AEP
4 plants or units that are at risk of retirement in the
5 modeling?
6 A. That's fair to say. I have no knowledge
7 of any AEP units specifically being identified as to
8 be retired by the model.
9 Q. Do you have any general indication from
10 the model of the likelihood of AEP coal-fired units
11 generally being susceptible to retirement in the next
12 10 years?
13 A. No.
14 Q. The next sentence in that same section
15 of direct testimony says, "The AuroraXMP Electric
16 Market Model makes capacity expansion" -- I assume
17 that's and?
18 A. That's correct. That will be collected.
19 Q. -- "retirement choices based upon
20 optimized economics and does not take into
21 consideration the willingness of a market participant
22 to accept financial losses over a period of years or
23 the associated benefits to state and local economies
24 in terms of employment, wages and taxes paid." Do

1 you see that?
2 A. Yes, I do.
3 Q. Why is -- what is the relevance of this
4 statement to your testimony?
5 A. Well, I think it's a very important
6 observation in that models are mathematical
7 algorithms that don't make choices that humans may
8 make. So but for the vagaries of human choice, this
9 model won't see that. So should there be considered
10 a value for a unit or units for reasons other than
11 just sheer economics or mathematical values, the
12 model doesn't see those.
13 So you may find that units last beyond
14 their -- what the model would say is its -- that
15 was -- was its economic life because of factors that
16 aren't knowable.
17 Q. Both of the factors that you identify in
18 this sentence, a willingness to accept losses over a
19 period of years and associated benefits of various
20 kinds, as I understand your testimony are factors
21 that might otherwise weigh against retirement of
22 units outside of the model, correct?
23 A. Correct.
24 Q. And those would be in addition to -- or

1 those would be -- strike that. That's all I need
2 there.
3 Just mopping up here. Your Fundamentals
4 Forecast also included SO2 and NOx emissions prices,
5 correct?
6 A. Correct.
7 Q. And those -- well, let me just ask you
8 from memory: Those prices did not include costs for
9 CSAPR allowances; is that correct?
10 A. Subject to check, and depending on which
11 forecast you're referring to, CSAPR allowances are
12 included. The values are zero in the results, but
13 they're included.
14 Q. Okay. So I'm not -- I just want to
15 follow up on a couple of those strands. Your answer
16 that CSAPR allowances are included at zero, is that
17 true of both the 2013 and 2015 Forecasts?
18 A. That -- that -- I don't know.
19 That's subject to check. It would be included in the
20 2015 Forecast. I'd have to check on the 2013
21 Forecast.
22 Q. When you say it would be included in the
23 2015 Forecast, do you mean it would be included at
24 zero?

A. Included at zero.

Q. Okay. And, again, just to streamline this: If -- let me do it this way. I'm almost done. I'm going to show you for the record the PDF copy on my screen of Sierra Club Interrogatory Answer 4-110, and see if that refreshes your memory as to whether you have the same answer about the 2013 Forecast. You're welcome to scroll or whatever you need to do.

A. Okay. I will. Take it back.

Q. You're not in my diary, are you?

A. I think I might be.

Q. You're welcome to -- that won't work, I don't think. If you -- yeah. If you just push that button, that will scroll for you.

A. Yeah. Yes. The 2013 Forecast has CSAPR values at zero.

Q. Okay. Let me just take a minute and review my notes.

(Pause.)

BY MR. BZDOK:

Q. Your fundamentals analysis is national in its scope, correct?

A. Correct, even international in that it includes parts of Canada.

Q. To the extent that they're included within an RTO, that includes the United States?

A. Correct.

Q. Are there RTOs other than MISO that that would be true of?

A. I'd have to check. We also include parts of Baja, California.

Q. How does the forecast account for regional variation in the various inputs?

A. Well, you've described them as inputs; so certainly there are regional inputs. Gas prices is a good example. It, of course, creates power prices from those regional inputs and creates regional power prices. So the model accounts for all of its inputs, and many of those are regional in nature.

Q. So say -- I just want to make sure I'm understanding you. Power prices at the PJM AEP Gen Hub are based upon inputs that are regional in nature to that -- the location that that Gen Hub serves?

A. That's correct.

Q. What do you know about PJM's capacity performance category for capacity auctions?

A. I don't know enough to -- to constitute

1 any sort of an inclusion in any forecast to this
2 point.
3 Q. So it's not included in any forecast at
4 this point?
5 A. It's not included in any forecast at
6 this point.
7 Q. Take a look at your Deposition
8 Exhibit 2, the 2013 Forecast, specifically the
9 capacity prices data. With the exception of the year
10 2016, the capacity prices in the AEP Gen Hub increase
11 year upon year upon year; is that true?
12 A. Subject to my check here currently, that
13 would be correct.
14 Q. In your experience, has -- have actual
15 capacity auction values historically increased year
16 after year after year, or have they moved around?
17 A. My experience with capacity values
18 resulting from the PJM capacity auction has been that
19 they move around; however, the results of the model
20 which calculates the energy revenue necessary -- or,
21 the capacity revenue necessary to keep the marginal
22 units viable, at least in this case, appears to
23 increase as times goes by.
24 Q. Why is that?

A. So the question is why does our model have as an output an increasing capacity value over time?

Q. Yeah.

A. There are several reasons, I'm sure, but the main reason has to revolve around the increasing nominal value of new capacity.

Q. Capacity value as presented by the model, if I understood you correctly, is the difference between energy revenue and the revenue required by a unit; is that correct?

A. That's correct.

Q. So if capacity value, as calculated by the model, goes up each year, is it correct to say that that means the difference in revenue between -- the difference between energy revenue of these units and the total revenue required by these units is going up each year?

A. That's correct.

Q. In your 2015 Forecast -- well, we talked about before the break that the natural gas prices in the 2015 Forecast tended to be lower by greater or lesser measure than the gas price projections for the same years in the 2013 Forecast; is that correct?

1 A. That's correct.
2 Q. Do you have any sense of why that is so?
3 A. Certainly nearby it's due to the
4 reaction to drilling rig count, to low gas prices,
5 that then cause there to be a correction and a
6 resumption towards a balance of price. That does
7 result, though, in gas price escalation, so to speak,
8 being pushed back due to this temporary cyclical
9 downturn in the business.
10 Q. So the impact in the -- strike that.
11 MR. BZDOK: Can I just have his answer
12 read back?
13 (Record read back as requested.)
14 BY MR. BZDOK:
15 Q. We also talked before the break about
16 how the power prices generally in the 2015 Forecast
17 are lower than the projections for comparable years
18 in the 2013 Forecast, correct?
19 A. Correct.
20 Q. Do you have a sense of why that is so?
21 A. Certainly on-peak power prices in PJM
22 are generally set by gas prices. So it followed to
23 reason that if gas price projections are lower,
24 on-peak power price projections would be lower in PJM

1 also.
2 Q. Anything else to explain that trend that
3 you're aware of?
4 A. Nothing comes to mind.
5 Q. Anything else to explain the lower gas
6 price projection other than what you explained about
7 the drill rigs?
8 A. No.
9 Q. Page 7 of your direct testimony,
10 starting at Line 6, has a sentence discussing
11 gas-fired electric generators that did not secure
12 firm transportation rights, and how that was -- how
13 that related to the polar vortex of 2013/2014,
14 correct?
15 A. Correct.
16 Q. Do you have any knowledge from your
17 understanding of developments in the natural gas
18 industry of whether more gas-fired plants in Ohio
19 have since obtained firm transportation rights?
20 A. I don't have a sense of that.
21 Q. Same question about plants in PJM?
22 A. I don't have a sense of that, either.
23 Q. Do you have any knowledge about whether
24 any plants in PJM have plans to obtain firm supply in

order to qualify as capacity performance resources?

A. I don't have specifics.

Q. What general understanding do you have?

A. General understanding is that firm transportation needs to be acquired so that you can count on the capacity available from that generator.

Q. Any sense from your general natural gas industry awareness and experience of whether there is any trend occurring in the market right now with respect to that?

A. In general, trend would be secure firm transportation or a backup fuel.

Q. Am I understanding your answer correctly, just to clarify, you're saying you have a general understanding that that is going on in the market currently?

A. That's correct.

Q. As part of your forecasting, do you review or consider in any way depreciation expense for generating plants?

A. I don't know of all depreciation -- if it's true for all depreciation, but certainly for environmental retrofits and other capital expenditures necessary or announced from electric

generators, those are included in -- as an expense in the Aurora Market modeling.

Q. Do you have a sense of whether in the modeling depreciation expense for coal-fired units is rising?

A. I don't have a sense sufficient to generalize a statement, no.

Q. What do you know about that topic?

A. With regard to coal-fired power plants specifically, there have been numerous capital expenditures made for environmental mitigation that would then stand to reason that there would be depreciation expenses associated with that. So it would be logical to conclude that those expenses would be increasing. But for that chain of logic, I don't have anything else to offer.

Q. Do you have any knowledge of any kind about the potential fate of the units proposed for the PPA rider in this case should the PPA rider not be approved?

A. No.

Q. You indicated in your -- in answer to me this morning when we were talking about capacity value in terms of the revenue required, you said it's

1 the revenue required by marginal units that's not
2 provided by energy revenue, but is needed to remain
3 and continue existing economically. Do you recall
4 that?
5 A. Yes, I do.
6 Q. What did you mean by the term "marginal
7 units" when you had that discussion?
8 A. Those units that are setting the LNP
9 price, which by definition wouldn't receive much in
10 the way of energy revenue. They need a capacity
11 revenue to be there to supply those needs even though
12 they receive very little money or no money for --
13 from energy revenue.
14 Q. So during on-peak periods, what units
15 are we talking about, what kind of units?
16 A. Depending on the severity of the peak,
17 those could be oil-fired units, those could be gas
18 steam units. Generally a peak unit is going to be a
19 gas combined cycle, but at that -- again, referring
20 to the asymmetry, the very asymmetric hockey stick
21 end of the supply curve, those could be any kind of
22 unit.
23 Remember, we must have capacity
24 sufficient to meet our reserve margins, and if that

capacity value is not there, those units won't stay.

Q. By the hockey stick, you mean that curve of 8,760 hours during the course of the year?

A. Yes. It's referring to the supply stack of units within a particular location and that merit-order stack of their variable costs.

Q. Same question: What are you referring to as the marginal units during off-peak?

A. Again, it depends on the level of the off-peak period, but those units, the definition stays the same, those units that receive little or no money on energy, yet they are called on to be dispatched.

Q. And typically what types of units are those during off-peak?

A. Typically those are coal units in PJM.

Q. Subject to reserving whatever rights related to some of these questions that you were instructed not to answer, that concludes my questions for you at this time. Thank you.

A. Thank you.

MR. OLIKER: My turn?

MR. CONWAY: Well, I suppose it's up to the intervenors to decide the order. So whatever you

1 folks have decided upon is acceptable to us.
2 MR. OLIKER: You guys mind if I go next?
3 MR. PRITCHARD: This is Matt. I don't
4 mind. But there's a little bit of echo on the phone;
5 so if everyone else could mute it but for the actual
6 folks in the room.
7 MR. OLIKER: All right.
8 MR. CONWAY: Before we go forward, do
9 you have any plans to use any of these documents?
10 MR. OLIKER: Yes. I probably will.
11 Makes it quite easy.
12 - - -
13 CROSS-EXAMINATION
14 BY MR. OLIKER:
15 Q. Okay. Good afternoon, Mr. Bletzacker.
16 A. Good afternoon, Joe.
17 Q. I guess before -- go back and just do it
18 this way.
19 MR. OLIKER: And, Dan, you can let me
20 just know if you object.
21 BY MR. OLIKER:
22 Q. Can you identify all of the individuals
23 that you notified of the existence of the 2015 Long
24 Term Forecast report prior to May 14, 2015?

1 A. Please restate the question.
2 MR. OLIKER: Could you read it back,
3 please?
4 (Record read back as requested.)
5 MR. CONWAY: Just to be clear, my
6 objection is to inquiring into the work -- our work
7 product that has arisen as a result of the case. To
8 the extent your questions delve into communications
9 he had in the course of preparing for the litigation
10 under the supervision or under the -- or directly
11 with the attorneys is off limits in my -- in my view
12 of things. But your question you just asked I don't
13 think --
14 MR. OLIKER: Okay.
15 MR. CONWAY: -- certainly doesn't
16 necessarily get into that if you're asking him about
17 how, as I understand it, how he publicizes internally
18 his forecast.
19 MR. OLIKER: Yeah. And we can take it
20 bit by bit, and hopefully we don't have to go beyond
21 that. But just to understand, he can answer the
22 question I just asked, which is who he notified of
23 its existence?
24 MR. CONWAY: Yes.

BY MR. OLIKER:

Q. Okay. So just to be clear for the record, can you please identify each individual that you notified regarding the existence of the 2015 Long Term Forecast report model run prior to May 14th, 2015? A mouthful.

A. Well, the forecast didn't exist prior to May 15th.

Q. Okay. But there was a model run, correct?

A. Well, there are many model runs.

Q. And --

A. It's an ongoing process.

Q. And the model run, itself -- let me ask it this way: The model run date, I believe, is some time in April of 2015, correct?

A. There are many model run dates, but, yes, that certainly was perhaps even a final model run.

Q. I'm sorry. I didn't mean to interrupt you. When was the last model run?

A. I would need to check, but pursuant to the date that's on the file --

Q. Yes.

1 A. -- it would look like that would be in
2 April of 2015.
3 Q. And can you identify all of the
4 individuals that you would have shared the results of
5 that model run with prior to May 14th, 2015?
6 MR. CONWAY: You keep saying May 14th.
7 Is that what you mean to say?
8 MR. OLIKER: What did I say?
9 MR. CONWAY: You keep referring to May
10 14.
11 MR. OLIKER: Yes, 2015, May 14, 2015.
12 MR. CONWAY: Okay.
13 BY MR. OLIKER:
14 Q. So between April of 2015 and May 14th,
15 2015, can you identify all the individuals you shared
16 the results of the April model run with?
17 MR. CONWAY: And just to be clear, I'm
18 sorry to interject again, but -- so I just checked
19 while you were asking the question, but May 14 is the
20 day before the amended application was filed.
21 MR. OLIKER: Yes.
22 MR. CONWAY: Okay.
23 BY MR. OLIKER:
24 Q. I don't care what you said to them, I

1 just want to know who you shared those results with.
2 A. Well, I disagree in calling them
3 results. Certainly the model has an output. It's
4 not a forecast at that point. There is perhaps a
5 constant conversation that goes on with subject
6 matter experts that help supply the input or effect
7 the input on this model.
8 And your question is who would you --
9 who would those subject matter experts be?
10 Q. Yes.
11 A. Well, it would start with my answer to
12 Chris, which certainly would be the policy folks to
13 make sure we captured policy correctly; it would
14 certainly be the Integrated Resource Planning Group;
15 it would certainly be the renewables people that
16 understand the costs and the likelihood of extended
17 tax subsidies for renewables. Beyond that, no one
18 comes to mind.
19 Q. Did you share any element of the results
20 with Dr. Pearce?
21 A. None, no.
22 Q. What about Bill Allen?
23 A. No.
24 Q. What about Pablo Vegas?

A. No.

Q. Anybody on the American Electric Power board?

A. No.

Q. Any individuals that -- besides the ones you previously identified?

A. Not that I can recall.

Q. And I understand that your memory is not completely clear, but do you have an idea of the month that the 2015 Fundamental Forecast was finalized and released to the general population?

A. I do.

Q. When was that?

A. The beginning of July of 2015, it was used in an integrated resource plan for one of our jurisdictions, perhaps Virginia, subject to check.

Q. And to clarify that, that sounded more like when you release it to the public; is that correct?

A. No. The IRP filing was beyond that. It was subsequent to that.

Q. Okay. Let's take a step beyond that. Do you know the month -- I think you mentioned the AEP intranet.

A. Yes.

Q. The 2015 Fundamental Forecast is currently published on the AEP intranet, correct?

A. Yes.

Q. Do you know what month that happened?

A. I'm not sure that the 2015 Forecast is even on or has ever been on the intranet to this point.

Q. Intranet?

A. Intranet.

Q. Is it the regular practice of AEP to post the Fundamental Forecast to the intranet for AEP?

A. Yes.

Q. Why has this one not been placed on the intranet?

A. The only customer for the 2015 Forecast was the Integrated Resource Planning Group for those IRP filings. The forecast has -- subsequent to that has been put on a -- what's called a SharePoint site for -- under corporate planning and budgeting for distribution. It's just a change in -- it's just a change in process.

Q. Okay. When was it posted on SharePoint?

A. I'd have to check, but probably the first part of July.

Q. And was it shared with anybody outside of the subject experts that you previously referenced prior to July?

A. No.

Q. Okay. After it was finalized in July -- to make a step back, historically do you make a presentation regarding the Fundamentals Forecast to American Electric Power executives?

A. No.

Q. Is it shared with them in some condensed form?

A. If they request it.

Q. Have they historically requested it?

A. Not consistently.

Q. When was the last time they requested it?

A. For their use, probably in 2013.

Q. And I think you mentioned to counsel of the Sierra Club that it's typical to update the forecast more than once a year, correct?

A. I said that history has shown that it has been updated once a year since 2010.

1 Q. Am I correct that there was not an
2 update in 2014?
3 A. You're correct.
4 Q. Why is that?
5 A. There was no significant change in
6 long-term fundamentals to justify it.
7 Q. Okay. I'm sorry to jump around, but you
8 talk about the calculation of capacity prices. So am
9 I correct that that's a residually calculated number?
10 A. If by the phrase "residually calculated"
11 you mean it's an output of the model, then the answer
12 is yes.
13 Q. Okay. Maybe I'll make it more clear.
14 It sounds like there is a calculation -- please let
15 me know if I misstate that -- there's a calculation
16 of energy revenues, and then there is a total revenue
17 requirement target from which those revenues are
18 subtracted, and the remainder is how the capacity
19 price is determined; is that correct?
20 A. Yes.
21 Q. And so am I correct that this revenue
22 requirement is the amount of dollars that AEP has
23 determined is necessary to continue the viability of
24 a generation station?

A. No.

Q. Please explain why that's not correct.

A. The model has determined whether these units are economically viable, not AEP.

Q. Okay. Thank you.

And this generation station has to be a certain reference type of technology, correct?

A. The physical characteristics of each generating station is known according to publicly available data.

Q. Okay.

A. So the extent that that answer is considered, the answer to your question is yes.

Q. Okay. Let's step back. Would you agree that there are different levels of revenue that are required to maintain the economic viability of a coal-fired generation station and a natural gas-fired generation station?

A. To the extent that they are unit specific, yes.

Q. But the capacity price that is included or is an output of the model is not varied, there's only one price, right?

A. That's correct.

1 Q. Could you tell me what type of
2 generating station it relates to?
3 A. I don't know that it refers to a
4 specific type, a specific fuel, only to the units
5 that are at margin, those units that receive little
6 or no money from energy sales.
7 Q. And embedded in that revenue
8 requirement, would you agree, has to be an assumption
9 for a return on equity?
10 A. Yes.
11 Q. Do you know what the return on equity of
12 the model assumes?
13 A. I don't know that specifically today.
14 Q. And that wasn't provided in discovery,
15 was it?
16 A. Not that I recall.
17 Q. Do you -- would you agree that the model
18 also has to assume a specific cost of debt, an
19 interest rate?
20 A. Yes.
21 Q. And do you know that debt level that's
22 assumed by the model in each year?
23 A. I do not.
24 Q. And do you know if that information was

1 provided in discovery to the parties?
2 A. I believe it was not requested by the
3 parties.
4 Q. Who determines -- scratch that.
5 How did you determine the return on
6 equity and the cost of debt that was used as an input
7 to the model?
8 A. Subject to check, those are values or
9 averages obtained through the solicitation of other
10 external consultancies.
11 Q. And when you say they were averages
12 provided by external consultancies, are you
13 indicating that those are forecasted future amounts
14 they provided to you?
15 MR. CONWAY: I'll object just briefly.
16 I think you misstated slightly the premise of your
17 question.
18 MR. OLIKER: Could I have the question
19 read back?
20 MR. CONWAY: But if the witness can
21 answer, you're -- okay.
22 MR. OLIKER: Can I have my question read
23 back, please?
24 (Record read back as requested.)

1 MR. CONWAY: My objection is, just so we
2 don't go back and forth, I don't think he said that
3 the external consultancies provided average values.
4 BY MR. OLIKER:
5 Q. So let me --
6 MR. CONWAY: I may be --
7 BY MR. OLIKER:
8 Q. Let me hone that down. Are you saying
9 you took averages of amounts provided by external
10 consultancies? Maybe you can clarify my question for
11 me so I can understand.
12 A. I'll let you figure out your own
13 questions.
14 Q. No. No. Go ahead. I mean, try to help
15 me understand how you took the forecasted amount from
16 external consultancies and used them in the model.
17 A. We certainly canvas and understand what
18 external consultancies believe to be good
19 representations of returns necessary to build these
20 units, to have these units, to own these units. We
21 don't simply average them. We don't rely on their
22 numbers. We go -- we create with that influence our
23 own forecast.
24 Q. Okay. And is this similar to what you

1 described earlier as the consensus outlook?
2 A. That's correct.
3 Q. Okay. We'll come back to that later.
4 In the Aurora Model -- first, which of
5 the models do you operate, is it just Aurora or do
6 you also operate a PLEXOS Model?
7 A. My group is responsible for operating
8 the AuroraXMP Energy Model. In other areas of the
9 company, the PLEXOS Model is run. To be specific, I
10 am aware that the Integrated Resource Planning Group
11 operates the PLEXOS Model.
12 Q. Do you have any use of the PLEXOS Model,
13 or is that just completely outside?
14 A. No. It's completely outside.
15 Q. Okay. Does the Aurora Model assume
16 monthly price of natural gas?
17 A. At least. It may even shape it on a
18 daily basis, but that's subject to check.
19 Q. And -- because as I look at -- let's
20 take number -- let's use the one that is the basis
21 for your testimony. It's Bletzacker Exhibit 2.
22 A. 2.
23 Q. If we go to the natural gas page, am I
24 correct that these Henry Hub figures are average of

1 the 12 months for each year?
2 A. That is correct.
3 Q. Okay. And -- but the energy dispatch --
4 or the energy prices, itself, would be a product of
5 monthly numbers, correct, or even more granular than
6 that?
7 A. Yes.
8 Q. Okay. How do -- let's -- am I correct
9 you relied on CERA, PIRA, WoodMackenzie largely for
10 your natural gas prices for your external resources?
11 A. Well, it includes them, but is not
12 limited to them.
13 Q. Did you also rely on --
14 A. We had --
15 Q. Sorry. I didn't mean to interrupt you.
16 A. We have an interrogatory that identifies
17 a long list of sources for energy market information,
18 including earnings calls, trade press, the EIA.
19 Q. And did you rely on the EIA for purposes
20 of your natural gas prices in the 2013 Forecast?
21 A. The EIA Forecast, as stated in the
22 beginning of the Annual Energy Outlook, is put
23 together with the assumption that current laws and
24 regulations remain unchanged, that's a direct quote.

1 So you can't rely on the EIA Forecast for their gas
2 price forecasts in any specific year, especially in
3 years where there are environmental things or other
4 items that they don't consider.
5 However, there are many useful things
6 you can obtain from the EIA, not the least of which
7 is that elasticity that we've identified, how quickly
8 they see prices rising versus how quickly they see
9 demand rising. While that's not a price, it is a
10 useful outcome of the EIA Forecast.
11 Q. So am I correct that you don't look at
12 the natural gas prices provided by the EIA in any
13 way?
14 A. I -- I wouldn't say that they're
15 discarded, but to the extent that they don't reflect
16 the necessary increase or decrease related to an --
17 an increase or decrease of demand of, say, natural
18 gas, due to the items that the EIA says they don't
19 forecast, those have to be discarded.
20 Q. Which items did the EIA not consider?
21 A. It depends on what vintage of forecast
22 you're referring to. Pre-MATS, they didn't consider
23 MATS; CO2, especially if the final rule is not in
24 their 2015 Forecast, and there certainly is

1 considerably natural gas response to the clean power
2 program -- so -- or Clean Power Plan.
3 So there are -- you can ubiquitously say
4 that, according to their statement in the beginning,
5 that it's done under the assumption that all laws and
6 regulations remain the same. So the answer would be
7 it didn't include any law that wasn't in effect at
8 the time the forecast was put forward.
9 Q. Okay. So let's take the 2013 EIA Annual
10 Energy Outlook. Is that what we're talking about?
11 MR. CONWAY: It's your question.
12 BY MR. OLIKER:
13 Q. That is my question.
14 A. Okay.
15 Q. Are you talking about the 2013 Long Term
16 Annual Energy Outlook?
17 A. With regard to what?
18 Q. The 2013 EIA Forecast you referenced.
19 A. I'm afraid I -- I don't understand your
20 question.
21 Q. Okay. Maybe we can -- you're familiar
22 with the 2013 EIA Long Term Annual Energy Outlook,
23 correct?
24 A. I'm familiar that it exists, and I'm

1 familiar that it starts with the premise that it's
2 done under the assumption the laws and regulations
3 remain unchanged. I can't recite specifics of their
4 forecast beyond that.
5 Q. Okay. Now, for example, you mentioned
6 the Clean Power Plan. If given that Clean Power Plan
7 goes into effect, originally 2020, now 2022, would
8 you consider the first five years of the Long Term
9 Annual Energy Outlook in your pricing of natural gas?
10 A. I certainly would consider features of
11 their forecast in our long-term natural gas forecast.
12 Q. Which --
13 A. It's not necessary to include or weight
14 it any heavier or any lighter than any of the other
15 forecasts that were provided.
16 Q. Would you agree that the EIA usually
17 provides four scenarios?
18 A. No.
19 Q. Were you familiar -- let me rephrase
20 that.
21 You did not know that the EIA provides
22 four scenarios of possible natural gas pricing?
23 A. I was aware that they did that here
24 recently, but that's not a common practice.

Q. Did you know they did that in 2013?

A. Didn't know that.

Q. But you do know they did that in 2015, correct?

A. Correct.

Q. Okay. Let's take a step back before we get to that one.

For purposes of the 2015 Fundamental Forecast, did you rely on the 2014 EIA Long Term Energy Outlook?

A. It was considered, yes.

Q. Okay. And do you know if the 2014 Long Term Energy Outlook had four scenarios in it?

A. I don't recall.

Q. Okay. How much weight did you give to the 2014 EIA Outlook in providing your 2015 Forecast?

A. I don't know that that's quantifiable. It was considered no more or no less than any of the other consultancies' forecasts were provided.

Q. And would you -- do you know if any of the external consultancy forecasts you relied upon were provided to other parties in discovery?

A. They weren't provided by us in discovery, no, but they're obtainable with

1 subscription to any one of those consultancies.
2 Q. They were effectively workpapers for the
3 Aurora Model, correct?
4 A. No.
5 Q. How -- what kind of -- can you describe
6 the process for taking, say, three forecasts of
7 natural gas and synthesizing that into your model for
8 an assumption? How would you do that?
9 A. It's more than taking the price from
10 three or more sources and integrating that into
11 the -- into our forecast. You have to understand the
12 context, the demand associated with those prices,
13 their outlook on exports of natural gas, their
14 increase in residential, commercial, industrial use.
15 Q. But do you just --
16 A. So the price that's being offered by the
17 consultancies as a stand-alone product would never be
18 used in our forecast as it sits. It's always
19 considered, though, but in the context of their views
20 of demand -- their unique views of demand and supply
21 of natural gas.
22 Q. How do you get from A to B with the
23 numbers we have on here on Bletzacker Deposition 2?
24 Can you describe me the process that you would go

through to produce those numbers?

MR. CONWAY: Are you asking about the A to B, or are you asking about the last question? Which one is it?

MR. OLIKER: I think that is the A to B.

MR. CONWAY: Okay. So what's A and what's B? I object to your question because it's vague if it's A to B.

BY MR. OLIKER:

Q. Okay. We have numbers on Bletzacker Deposition Exhibit 2 for natural gas. Can you just describe to me any math that you would do taking, say, the WoodMackenzie Forecast, the CERA Forecast, and the PIRA Forecast to get to these numbers?

MR. CONWAY: Which numbers are you referring to?

MR. OLIKER: The natural gas numbers.

BY MR. OLIKER:

Q. What math is involved?

A. If you would be kind enough to let me go from B to A rather than A to B, that would be helpful.

Q. Whatever the easiest way to do it. I just want to understand.

1 A. So starting at B, we have to understand
2 the price that is related to the demand after fully
3 iterating our model. To be specific, natural gas
4 demand for residential, there should be an
5 assumption; for commercial, there should be an
6 assumption; industrial and electric generation.
7 However, as an output of the model, the
8 complete United States burn of natural gas for
9 electric generation, which is the largest consumer --
10 or, which is the -- the component of natural gas
11 consumption that is changing most rapidly, that
12 component needs to be defined through the output of
13 this Aurora Model. So beginning at B and identifying
14 that there is a certain demand and there is a certain
15 price response due to that change in demand from
16 previous iterations, working our way back to A, is a
17 necessary component.
18 Going back even further, we need to
19 understand what is said about demand and the cost of
20 supply to generate the prices unique to an EIA
21 Forecast, a CERA Forecast, PIRA Forecast, and others.
22 When you understand what their assumptions are, we
23 need to generate what we think our baseload
24 assumptions would be, and then what price would be

1 associated with those -- those -- those demands. By
2 the way, it's most efficient to do that on a
3 real-dollar basis to minimize any influence of
4 inflation.
5 And when you return to A, you find that
6 when you net out each consultant's view of demand,
7 the cost of supply, they are a lot closer than
8 perhaps you would expect.
9 Q. Am I correct that what you've just
10 described is that to some extent price is an output
11 of the Aurora Model, but also an input?
12 A. Let me clarify and say that it's not an
13 output of the Aurora Model. We make it -- through
14 iterations of the Aurora Model, we make it our final
15 input.
16 Q. How do you choose the starting point for
17 your iterations?
18 A. By unwinding all of the demand and
19 supply views, hereinafter called the consensus view,
20 of consultancies, even including the EIA. And it's
21 most revealing to do on a real-dollar basis.
22 Q. And grafted in the consensus view, do
23 you have a low case, a high case, and a reference
24 case from the various consultancies?

1 A. That doesn't directly create the base
2 case view. Each one of these consultancies has
3 different components to their low and high cases.
4 Some of them have different views of the economy,
5 some of them have different views of oil prices, for
6 instance. They all have different views that create
7 their scenarios. We have to unwind all of those
8 views, but particularly with the base case, to
9 understand their views of the reaction between
10 supply, demand, and price.
11 Q. Is it safe to say that in reality there
12 is no consensus between the consultancies, it's
13 something that you have to determine?
14 A. To some degree, that's correct.
15 Q. So you're trying to sift through their
16 recommendations to find an input to the model,
17 correct?
18 A. Not entirely correct. We're trying to
19 sift through their assumptions that create their
20 prices to then help us craft our prices to become an
21 input to the model. We never accept the price from a
22 consultancy as an input, but an understanding of
23 their assumptions around their generation of the
24 price as a starting point.

1 Q. And those assumptions are exports,
2 production, demand, and what else?
3 A. Well, you've identified -- demand is
4 the -- is the description of the category that
5 exports would fall under. So to be specific, you
6 need to understand demand maybe even first, what you
7 believe demand will be. We've identified
8 residential, commercial, industrial, electric
9 generation subject to a lot of iteration, will there
10 be or what risks can you apply to your LNG exports,
11 also imports and exports to Canada and Mexico.
12 There won't be a consensus among all
13 consultancies and the EIA about those numbers, but
14 the price reaction to those numbers is of interest to
15 us and what we must unwind to generate our starting
16 point of a natural gas price.
17 Q. Is rig count also something you
18 consider?
19 A. Yes.
20 Q. How does rig count -- is the rig count
21 considered by the model or considered by AEP in
22 making the inputs to the model?
23 A. It's considered not by the model, but by
24 AEP in the making of those inputs to the model.

1 Q. And how do you consider it?
2 A. I think the market activities since
3 Thanksgiving or Christmas ends up being a good
4 example. Rig count has dropped precipitously in
5 reaction to price dropping precipitously.
6 A good portion of our natural gas supply
7 comes from shaled sources that deplete very, very
8 quickly, exponentially in fact. So rig -- a change
9 in rig count then tells you two things; one is what
10 prices keep rigs in what years busy, what prices do
11 they need to see to then begin drilling. There is a
12 lag between rig count and production and a lag
13 between production and pricing changes.
14 So rig count is a very fundamental item
15 to look at to affect your forecast in the nearby,
16 let's say in the next year or two. Rig count beyond
17 that is not necessarily worthy of a closer look.
18 Q. Okay. Two follow-up questions on that.
19 First you said that shale resources deplete very
20 quickly. Could you give that definition of quickly
21 as used in that sentence?
22 A. In general, 80 percent of the
23 production, 80 percent of the reserves in a shale
24 well produce in the first couple years.

1 Q. And by "couple," do you mean three to
2 five?
3 A. Yes.
4 Q. And also to follow up on that question,
5 is it your belief that dwindling rig count is an
6 indication that prices have to rise in the near term?
7 A. Yes. Specifically it's an indication
8 that if rigs are not being commissioned to drill
9 wells, it means that the economics are insufficient,
10 the price is insufficient.
11 Q. Would you agree that the price, however,
12 will not rise to the extent storage injections remain
13 above the five-year average, storage levels? I can
14 clarify that.
15 A. Storage levels are due to demand in the
16 winter period or the summer period on a refill, but
17 primarily the winter period on withdrawal. I don't
18 understand the connection in your question between
19 storage levels, which is a season-by-season number --
20 Q. Okay.
21 A. -- as related to long-term price.
22 Q. Would you agree that the storage levels,
23 they're a product of a few things, production
24 compared to demand, correct?

A. I don't think I accept -- I don't accept that, no.

Q. Would you view demand over the past nine months as below average, average, or above average?

A. I view the weather-normalized demand as being quite average.

Q. In that response you just gave, what do you mean by weather-normalized demand?

A. It's the demand that you would expect if heating degree days or cooling degree days are at the 30-year average.

Q. Okay. My question's a little different. The actual demand over the past nine months, would you consider that below average, average, or above average?

A. I would have to check. I have no opinion about actuals.

Q. Would you agree that despite the fact that rig count has dwindled, storage injections went from being below the five-year average to above the five-year average over the past nine months?

A. I would need to check. I can't agree or disagree.

Q. How often -- do you review the EIA

1 storage report every Thursday?
2 A. Not every Thursday.
3 Q. How often do you review it?
4 A. Once a month.
5 Q. Would you agree that we're currently
6 above the five-year storage level average?
7 A. Yes.
8 Q. And would you agree that that is --
9 would you agree that despite dwindling rig counts,
10 we're likely to be well above the five-year average
11 going into this winter?
12 A. The two are unrelated, I would agree to
13 that.
14 Q. Would you agree that one of the reasons
15 why storage levels are where they are is because
16 productivity in the Marcellus shale has exceeded all
17 such expectations?
18 A. Restate that, please.
19 Q. Let me say it very simply: Would you
20 agree that over the winter of 2014/'15, productivity
21 level at Marcellus shale rigs has exceeded all
22 expectations, if you know?
23 A. You're asking me to refine someone
24 else's expectations; so I don't know.

1 Q. Would you agree that productivity in the
2 Marcellus shale has increased in this past winter
3 relative to the prior winter?
4 A. Perhaps if you'll help me understand
5 productivity.
6 Q. The efficiency of each well.
7 A. You're not helping me. What do you mean
8 by "efficiency"?
9 Q. The amount of gas that you're getting
10 out of each well.
11 A. I -- I have nothing to offer about the
12 amount of gas that comes out of each well.
13 Q. Do you understand the -- do you want
14 more clarification of the question, or are you not
15 familiar with the amount of gas each oil rig is
16 producing?
17 MR. CONWAY: Objection. He answered the
18 question. If you have another question to ask, ask
19 it or ask another question. If you have a follow-up
20 question, ask it, ask the follow-up question. You're
21 at the point where you're arguing with him a little
22 bit.
23 MR. OLIKER: I'm trying to find out
24 which part of the question -- can you clarify that,

if -- did you understand my question, Mr. Bletzacker?

THE WITNESS: No, because it's -- with all due respect, it's just phrased poorly.

BY MR. OLIKER:

Q. That's fine. That's usually my fault.

A. No disrespect.

Q. Are you familiar with the amount of natural gas a rig can produce?

A. Rigs don't produce natural gas.

Q. Can you clarify that?

A. Rigs drill holes in the ground.

Q. Okay.

A. After they drill holes in the ground, a different unit comes in, runs casing, fractures the well, and then a well is then sent to market.

Q. Okay. Are you familiar with the amount of natural gas a well can produce?

A. Did you have a particular well in mind?

Q. How about the Marcellus shale.

A. I can't -- I can't recall any production rates per well.

Q. How about historical productivity or production levels in the Marcellus region, have you reviewed those figures?

A. So historical over what period of time?

Q. Past five years.

A. I have a general understanding of that.

Q. Would you agree that production levels have increased for each well over the past five years?

A. Yes.

Q. And they reached their height during this past winter, correct?

A. I would need to check, but subject to check, that is a reasonable conclusion.

Q. Okay. You've talked about the relationship in your testimony to storage levels, correct?

A. Yes. I refer to storage levels in several different contexts in my testimony.

Q. Okay. And I think you indicated to counsel from the Sierra Club that when storage levels drop to 80 percent below capacity, there is an adverse impact on price, correct?

A. Correct.

Q. And when you use that 80 percent number, that's the lowest number that was experienced in February of 2014, correct?

1 A. That is correct.
2 Q. Okay. So another way to -- the inverse
3 to talk about this is when storage is only 20 percent
4 full, then there is an adverse impact on price?
5 MR. CONWAY: What kind of impact?
6 MR. OLIKER: Adverse.
7 THE WITNESS: Say it one more time,
8 please.
9 BY MR. OLIKER:
10 Q. So the inverse is just we're talking
11 about when storage is only 20 percent full, that's
12 when you're likely to see the most inflationary
13 pressure on price, correct?
14 A. No.
15 Q. Why is that?
16 A. It's just an improper representation. I
17 think you've done your inverses wrong.
18 Q. Explain why it's not correct. Help me
19 out.
20 A. I'm not so sure about helping you out,
21 but I will offer you this, the -- when storage levels
22 are at 80 percent, more or less, of their five-year
23 averages and you recognize that those five-year
24 averages depend on which week you're talking about,

on November 1st they're full, on March 31st perhaps they're at their emptiest.

Q. Okay.

A. So when on a Thursday EIA storage report inventories are about 80 percent of the five-year average for that week, you are at risk for those abnormal, uncomfortable spikes in prices.

Q. Okay. Now I think I understand the issue. You referenced the 80 percent number. You're comparing that to the five-year average, am I correct?

A. Absolutely.

Q. Okay. I had the wrong number.

And what if the storage level is somewhere between 80 percent and the five-year average, how does that impact the price?

MR. CONWAY: I'll object to the form of the question, Mr. Oliker.

MR. OLIKER: Do you understand, Mr. Bletzacker?

MR. CONWAY: There is nothing -- there is no other end to the between that I heard.

MR. OLIKER: I said somewhere between 80 percent and the five-year average.

1 MR. CONWAY: Okay.
2 THE WITNESS: I can typify that in that
3 range the price reaction is not as -- as great as it
4 is below -- inventory below 80 percent.
5 BY MR. OLIKER:
6 Q. Okay. Would you agree that during this
7 past winter storage levels dropped below 80 percent
8 of the five-year average, if you know?
9 A. I -- I wouldn't agree, because I don't
10 know.
11 Q. Well, would you agree that this past
12 winter prices actually decreased relative to where
13 they were going into the winter?
14 A. Have you -- are you still continuing to
15 represent that storage levels did go below 80 percent
16 of normal?
17 Q. That's a different question.
18 A. Okay. Am I aware that prices have
19 dropped throughout the winter?
20 Q. Yes.
21 A. Generally so, yes.
22 Q. And --
23 A. And I assume that you're referring to
24 the benchmark Henry Hub.

Q. Yes, I am.

Before you filed your testimony in May of 2015, did you evaluate whether or not storage levels dropped below 80 percent of the five-year average at any time during this past winter?

A. Mr. Oliker, my forecast is for a weather-normalized, long-term forecast that assumes that storage inventories are always at zero compared -- zero percent compared to the five-year average; so, no, it was not considered.

Q. On page -- this discussion on Page 6 and 7 of your testimony, am I correct that that discussion regarding volatile pricing is based upon the impact of storage levels?

A. Well, you've pointed to both Pages 6 and 7.

Q. Yes.

A. Page 6 starts with heating degree days in Ohio from 1895 to present, and it is logical to conclude that weather is never normal.

Q. Uh-huh.

A. Never is a tough term, but rarely ever normal by looking at the red line compared to the yearly blue lines.

1 With that being understood, when demand
2 for natural gas is such, likely due to weather, that
3 storage inventories are compromised, particularly
4 compromised past nominally and 80 percent of a normal
5 level, then you can expect to have a volatile
6 reaction in price.
7 Q. Okay. And to synthesize that down,
8 especially on Page 7, your testimony is that in a
9 colder-than-normal winter, demand is higher, it
10 causes storage levels to drop and price to increase,
11 correct?
12 A. Yes.
13 Q. And would you agree that the concept
14 that we just discussed and referred to on Page 7 did
15 not happen this past winter?
16 A. Yes.
17 Q. Thank you. The Aurora Model has a
18 summer peak usage assumption, correct, for demand --
19 peak demand?
20 A. Correct.
21 Q. What is the source of that information?
22 A. The base assumption for loads come
23 primarily from information gained from the EIA and
24 from Moody's, economy.com, or Moody's Analytics, but

1 ultimately they come from our Load Forecasting Group.
2 Q. And is it a PJM-wide number?
3 A. It includes PJM, but it covers the
4 entire United States and parts of -- other parts of
5 North America.
6 Q. Okay. When was -- the load forecast
7 that was the input to the 2013 Fundamental Forecast,
8 when was that load forecast determined or created?
9 A. I'd need to check for further
10 granularity, but no more than six months before the
11 release of the forecast.
12 Q. Okay. And likewise, the 2015
13 Fundamental Forecast, when was that load forecast
14 created?
15 A. Same answer, but I could probably
16 provide some granularity that would -- would suggest
17 that it would have been perhaps near the end of the
18 first quarter of 2015.
19 Q. Okay. And am I correct that neither the
20 2013 nor the 2015 load forecast considers energy
21 efficiency that may result from compliance measures
22 with the Clean Power Plan?
23 A. That's correct.
24 Q. Okay. And I've got a document -- I

1 don't know if we need to mark it as an exhibit, but
2 it's an input to the 2013 Long Term Forecast. There
3 is an assumption for energy efficiency, correct?
4 A. There is, yes.
5 Q. And that was provided -- it's the NERC
6 region energy forecast adjustment for energy
7 efficiency. Are you familiar with that terminology?
8 A. Yes.
9 Q. Could you explain what that is?
10 A. Well, in the reliability zones,
11 reliability regions assessment, I believe it's an
12 annual assessment of -- well, of reliability, they
13 include projections of load and the -- I guess the
14 opposite of load would be energy efficiency, not
15 considered a negative generating source, but a
16 reduction in load due to that.
17 So that is -- has been identified as
18 your source document, NERC's own preparation of that
19 information on energy efficiency.
20 Q. Do you know when NERC determined those
21 numbers, what year?
22 A. No.
23 Q. And there is a column for percentage
24 load reduction. Are the numbers cumulative as you go

from 2013 to 2030?

A. It's subject to check, but I believe not.

Q. Okay. And I don't think we need to mark it as an exhibit, you can just look at it.

A. Yeah, I don't know that I'm any more enlightened as to whether these are cumulative or individual years.

Q. Okay.

A. Again, subject to check, I believe that those are just individual years.

Q. Thank you.

A. Production and demand.

Q. And the model also considers solar and wind construction, correct?

A. Correct.

Q. Where did that information come from?

A. Well, certainly new generation is an output of the Aurora Model. Megawatts of new generation is an output of the Aurora Model.

Q. Including solar and wind?

A. Yes. It certainly comes from the many assumptions as inputs to the model, including competition from natural gas and the costs of new

generation.

Q. And would you agree that if the amount of solar and wind construction is actually higher, the impact energy prices would be to lower them in reality?

A. Generally speaking filling up the supply curve, which would be on the furthest left side of resources that have very little or no -- little operating costs, to the extent that that shifts units further to the right, demand remains the same, price would drop.

Q. Okay. You talk about on -- I want to get page numbers -- the five percent deviation in load and its asymmetrical impact on power prices, correct?

A. I do talk about that, that's correct.

Q. Have you evaluated the impact of five percent load deviation on power prices using your 2015 Long Term Forecast?

A. No. But subjectively the answer would be quite similar because of the asymmetric nature of the supply stack. Higher price units result in -- higher operating cost units result in a higher power price as does lower, but the response is

1 assymetrical.
2 Q. Would you agree that the function of the
3 2015 versus -- take it a step at a time.
4 When composing your supply stack, I
5 think you mentioned to Sierra Club's counsel that you
6 need to consider the marginal cost of operating a
7 unit, correct, which is largely fuel cost, right?
8 A. Yes. The model considers that.
9 Q. Okay. So in composing your supply
10 stack, all else being equal, you lowered the price of
11 natural gas, then natural gas units are more
12 efficient, correct?
13 A. I differ with the use of the word
14 efficient, but in order to offer some help --
15 Q. I appreciate it.
16 A. -- they certainly -- it affects the
17 level of the supply stack, the resulting price of the
18 supply stack.
19 Q. Okay. And if we were to compare the
20 2013 and the 2015 -- let me try that again.
21 If we were to create supply stacks using
22 the fuel assumptions in the 2013 Fundamental Forecast
23 and the 2015 Fundamental Forecast, would you agree
24 that there would be -- natural gas resources would

1 have a lower dispatch cost based upon the 2015
2 Fundamental Forecast?
3 A. Generally speaking, yes. I am assuming
4 that you're comparing the same years, the same time
5 periods.
6 Q. Yes. And have you evaluated the extent
7 to which coal resources may be the marginal clearing
8 unit for on-peak pricing based on the 2015
9 Fundamentals Forecast?
10 A. You've asked about coal units setting
11 on-peak prices in the 2015 Forecast?
12 Q. Yes.
13 A. We've done no evaluations searching for
14 coal units in specifically setting that price.
15 Q. Okay. How did you determine the supply
16 stack? Can you walk me through how you built the
17 assumptions for the generating units?
18 A. Well, the model does that for us.
19 Q. Okay.
20 A. But the building of that supply stack, I
21 think, is rather straightforward as it identifies
22 what each of the dispatch costs are, each of those
23 variable costs are, certainly an input to the model.
24 Q. Uh-huh.

A. What the unit's availability is, we have to -- the model has to decide whether the unit's available to be dispatched, whether there's a forced, unforced outage, normal maintenance numbers, obviously what the demand is, how the days stack up against each other, a prolonged -- in the model a prolonged period of above-normal weather, they have to vary the weather above and below according to a shape, the normalized average. That creates essentially daily supply stacks for each region that we model. The demand then delivers the price to you.

Q. Is -- maybe I'm missing it. Is oil -- the price of oil an input to the model?

A. Yes.

Q. In a market where oil prices and natural gas prices are trading -- oil prices are trading near where they are now and natural gas prices are below $5, would you agree that there's not an assymetrical impact on price with a five percent increase in demand?

A. On a Btu basis, oil is still priced well above natural gas. So there is no substitution of oil for natural gas, just to not dampen any asymmetry you may be referring to.

1 Q. Do you know what the cost of producing
2 electricity is per megawatt hour for an oil unit
3 based upon current market pricing?
4 A. Not specifically, but assumptions can be
5 made. The heat rate or the inverse of efficiency of
6 an oil unit is just subjectively poor. The price per
7 Btu of oil, even at $45, $50, $55, $60 a barrel is
8 well above the cost of natural gas. So subjectively
9 it is considerably greater than a natural gas-fired
10 unit, but any more specificity would just need
11 further calculations.
12 Q. So when you're referring to the
13 asymmetry of power prices, which units specifically
14 are causing the spike that you discuss based upon
15 increased demand?
16 A. Certainly that asymmetric response you
17 get through the five percent increase in load
18 presumably due to weather causes new units to set the
19 margin, to set the price. Those new units are
20 certainly less efficient than the units that were
21 setting the margin at the weather-normalized number,
22 and those can include gas steam, oil units, and other
23 less efficient units.
24 The overriding concept, though, to use

1 the -- the easier phrase, the hockey stick end of the
2 curve, which is made up of those inefficient units,
3 that's exactly what contributes to the asymmetry.
4 The asymmetric response is what's interesting.
5 Q. Okay. And sticking with the asymmetry,
6 are you referring to a monthly asymmetry, or an
7 hourly asymmetry, or both?
8 A. It could extend well beyond that.
9 Q. Okay.
10 A. So both, and beyond.
11 Q. For purposes of the five percent demand
12 increase you include in the model, what duration did
13 you assume the five percent increase for?
14 A. Well, the graph in my testimony on
15 Page 11, Figure 5, identifies a five percent increase
16 continuously through 2030.
17 Q. Okay. So it's just inflated all demand
18 by five percent in every hour?
19 A. And reduced it by five percent in every
20 hour, and the response, as can be seen in Figure 5,
21 is asymmetric, green compared to red.
22 Q. Okay. And the baseline to which you
23 applied the five percent increase or decrease did not
24 include any assumptions for total reduced demand for

1 the Clean Power Plan, correct?
2 A. It included all the assumptions in our
3 base case.
4 Q. Okay. And the base case did not
5 consider any energy efficiency increases that may
6 result from the Clean Power Plan, correct?
7 A. It's important to note that our base
8 case includes a forecast modeling proxy of $15 per
9 metric tonne beginning in 2022, which is a number
10 that we've had for the last five years or so. So to
11 the extent that that is a good proxy, and it is, for
12 a final clean power program, yes, it would consider
13 it.
14 Q. Now, hold on a second. First let's go
15 back and just make sure. I think you said this
16 earlier, the demand levels that are assumed in the
17 model, that does not -- that's based upon -- is that
18 based upon the NERC Forecast that we discussed or is
19 that a different number?
20 A. It's based upon our load forecast which
21 is generated from Moody's Analytics, the EIA, but
22 comes ultimately from our Load Forecasting Group. It
23 is our base case forecast.
24 Q. And does that forecast assume a

1 different level of energy efficiency than what the
2 NERC provided?
3 A. It's subject to check, but I -- it
4 certainly -- it has to.
5 Q. And does the assumption of energy
6 efficiency included in the model include energy
7 efficiency that may result from the Clean Power Plan?
8 A. It has the amount of energy efficiency
9 contemplated by our proxy for carbon regulation in
10 2022. The clean power program final rule was just
11 recently issued. It can't include that specificity.
12 Q. Mr. Bletzacker, you would agree that
13 your carbon text, if you're okay with that
14 terminology, is a production cost for a coal unit or
15 a natural gas unit, correct?
16 A. That's correct.
17 Q. And that would apply to the amount it
18 costs of dispatching those resources, correct?
19 A. That's correct.
20 Q. That's independent of any energy
21 efficiency member -- or measures that a retail
22 customer may implement, correct?
23 A. No.
24 Q. And why is that?

A. There is a feedback loop that I am concerned that you're ignoring, and that is that as prices go up, demand can respond. I know at my house when prices go up, we make provisions to reduce consumption.

Q. Can you explain how that's considered as an input to the model or an output to the model?

A. Yes. The load forecast that is given to us from our Load Planning Group does include what I believe they'd call the -- the consumer price elasticity. As prices go up, consumption responds to some minor amount, to some amount. Depends on who you are how minor that is.

Q. So is the amount of energy efficiency considered in the model increasing starting in 2022?

A. Logically I'd have to come to that conclusion, but I'd need to check to make sure.

Q. Okay. Are there conditions that may exist that would cause there to be no increase in power prices when there is a five percent increase in demand?

A. The condition that would have to exist would be a flat portion of the supply curve from the weather-normalized number to plus five percent of

1 load. If load was covered by the extreme left part
2 of the supply curve where there is very little
3 dispatch costs, nuclear, wind, others, there
4 certainly would be very little change in power prices
5 due to a five percent increase in load.
6 But those resources that are available
7 to us beyond the weather-normalized number are at
8 that hockey stick end of the supply curve where
9 there's a considerable response.
10 Q. So what you're saying is there has to be
11 a compression of the dispatch costs of the marginal
12 units that are coming online? If you understand
13 that.
14 MR. CONWAY: I'll object to the form of
15 the question, but if you understand it.
16 THE WITNESS: I don't -- I don't
17 understand.
18 BY MR. OLIKER:
19 Q. So when conditions exist that cause the
20 price per mmBtu of the next marginal unit that comes
21 online to be closer to the already dispatching units,
22 then prices won't go up. That's what you're saying?
23 A. That -- that -- yes. That's true.
24 Q. When you were talking about the

1 assymetrical relationship of power prices, I'm
2 correct you kept fuel prices constant between 2015
3 and 2030, correct?
4 A. That's correct.
5 Q. Did you consider a carbon tax in that
6 analysis?
7 A. Let me clarify. We did keep fuel prices
8 constant, we kept them equal to the base case numbers
9 in each of those years in each of those locations.
10 Q. That's the question.
11 A. I assume that that's what's premising
12 your question.
13 Q. Okay. So you kept the fuel numbers in
14 line with the base case, but did you also consider
15 that starting in 2022 there would also be a carbon
16 tax?
17 A. Yes. Our base case is put together with
18 the understanding that there would be a carbon tax of
19 $15 a metric tonne, and it escalates on a real-dollar
20 basis.
21 Q. What is your understanding of the
22 purpose behind a tax on carbon emissions?
23 A. I'm going to need to think further about
24 the use of the word "a tax," but generally we're

1 looking to reduce carbon emissions in the United
2 States.
3 Q. What kind of terminology would you be
4 more comfortable with for purposes of discussion
5 besides a tax?
6 A. Mitigation.
7 Q. Okay. So would you agree that the
8 purposes of carbon mitigation efforts is to reduce
9 output of coal-fired generation stations?
10 A. I would admit that the purpose of
11 mitigation efforts is to reduce CO2 output.
12 Q. And coal-fired generation stations are
13 the largest emitter of CO2 output, correct?
14 MR. CONWAY: I'll object to the
15 question, the form of the largest.
16 BY MR. OLIKER:
17 Q. Is there any other generation station
18 that emits more CO2 than a coal-fired generation
19 station?
20 A. Subject to check, inefficient oil.
21 Q. And how many megawatts of that are in
22 PJM?
23 A. I don't know.
24 Q. Would you agree it's not much?

A. I guess compared to all generation --

Q. Yes.

A. -- it is a small portion.

Q. Okay. And would you agree -- okay. Did you discuss with counsel for the Sierra Club your statement that, in fact, natural gas prices exceeded $30 per mmBtu in many locations this winter?

A. There was a question from the counsel for Sierra Club regarding what area -- or at least my response identified what area of the country that took place.

MR. CONWAY: I'm going to -- it's not really an objection, but a clarification about which section of the testimony was referenced there so that the -- this winter part of the question is not left subject to inaccurate interpretation.

MR. OLIKER: That's fine.

BY MR. OLIKER:

Q. I think it's on Page 5. I just wanted to be sure that your statement on Page 5, Line 9, "In fact, they exceeded $30 per mmBtu in many locations that winter," now, is that related to the polar vortex or this past winter?

A. It's related to the question that that's

1 responding to, which is the winter weather of
2 2013/2014.
3 Q. Okay. Good. Thank you for that
4 clarification.
5 And you said that was the northeast,
6 right?
7 A. That's correct. It includes, but not
8 limited to, the northeast.
9 Q. Do you know for how many days the price
10 exceeded $30 per mmBtu?
11 A. No.
12 Q. You talked about storage capacity is
13 around four TCF, correct?
14 A. Yes. Working capacity, that capacity
15 which is able to be injected and withdrawn across the
16 United States, is approximately four trillion cubic
17 feet, or 4,000 billion cubic feet.
18 Q. Do you know what happens when storage
19 injections reach four TCF?
20 A. The phrase "what happens," is a little
21 wide for me.
22 Q. I wanted to start broad. I can clarify.
23 A. Please do.
24 Q. Would you agree that as storage

1 injections approach four TCF, there is a
2 depressionary force on price?
3 A. That's a question?
4 Q. Yes.
5 A. And the question is whether I recognize
6 that's a depressionary force?
7 Q. Yes.
8 A. Storage injection should be considered a
9 demand for natural gas. When that demand doesn't
10 exist, it makes perfect sense that that would reduce
11 price.
12 Q. Okay. You would agree that you can't
13 inject more than four TCF into storage, it's a
14 physical limit, right?
15 A. It's a pressure limit.
16 Q. Yeah.
17 A. Physically you could probably exceed it,
18 but based on the storage fields rating, four TCF is a
19 nice, round number as the total amount.
20 Q. And that's why as injections approach
21 four TCF, gas has to find a market, right, because
22 there's nowhere for it to go?
23 A. Or be shut in, correct.
24 Q. Okay. And to the extent we approach

1 four TCF as we go into this winter, would you agree
2 that that's likely to push down prices this winter?
3 A. No.
4 Q. Why not?
5 A. Four trillion cubic feet is the wind/gas
6 capacity as we've discussed. As that level is
7 reached -- and keep in mind that interstate natural
8 gas pipeline storage tariffs have ratchet provisions
9 as to how much storage you can put away at any given
10 time -- there is generally a gentle glide path
11 towards full.
12 But when you reach nominally November
13 1st and there is no more storage demand, the value of
14 gas could be affected downward, but for any weather
15 event or anything else that could counteract that.
16 Q. So in other words, the closer to four
17 TCF we are come November 1st, the more likely we're
18 going to have low gas prices this winter, correct?
19 A. No.
20 Q. Why not?
21 A. Everyone knows that storage needs to be
22 filled by November the 1st. So to the extent that
23 storage levels deviate from a consensus plan for
24 refill, and on the flip side of that a consensus plan

for withdrawal, those realities move the market.

Q. But you would agree that there's a range of storage that -- let me rephrase that.

There is not a set number for filling storage come November 1st, correct, there's a range?

A. Again, I -- are you referring to price? Are you referring to quantity? Are you referring to --

Q. Quantity of storage. Quantity of working gas in storage.

A. Please restate the question.

Q. Which part of my question don't you understand?

A. At this point, all of it.

Q. You indicated storage has to be filled before you go into the winter, am I correct?

A. It's a reasonable expectation that it will be filled, that's correct.

Q. There is a range of levels to which storage has been filled or the past five years as we go into the winter, correct?

A. That's correct.

Q. Okay. And your testimony is that if we are on the higher range of storage going into the

winter versus the lower range, that that difference doesn't make any impact on price?

A. Are you referring to my written testimony?

Q. Your testimony today.

A. To the extent that storage levels differ from market expectations, there can be an effect on price. If storage injections are less than four trillion cubic feet, which is quite understandable because the national number is made up of many, many different storage fields across the three storage regions in the United States, that they all have their own locational situations, and then they'd have all -- also have their own locational reactions or effects on price, that a blanket statement that -- that to some degree storage isn't full -- completely full on a particular area, it would have an effect of some sort on price.

Q. Okay.

A. But being full or near full is an expectation.

Q. Do you review the EIA's Short Term Energy Outlook?

A. Occasionally.

Q. Would you agree that they say gas will be at $3.20 in 2016?

A. Is that on a real or nominal-dollar basis?

Q. Nominal.

A. I'm unaware of that.

Q. Are you aware of them saying it on a real basis?

A. I'm unaware of that also.

Q. Sorry to jump around. In your testimony you say that, "Typically, a 15-year Firm Transportation contract is required to allow for cost recovery. Unfortunately, these long-term contractual obligations for firm transportation services are not economically justified by gas-fired electric generators while the current PJM RPM capacity market provides no parallel assurance of capacity revenue."

What do you mean by a 15-year transportation contract is required?

MR. CONWAY: Do you have a page reference, Mr. Oliker, for the quote that you just recited?

MR. OLIKER: Give it to you in a second. It's on Page 8, Q and A starting on Line 1. The

1 sentence I read starts on Line 8.
2 THE WITNESS: Please restate the
3 question.
4 BY MR. OLIKER:
5 Q. How about -- let's start with Line 8,
6 "Typically, a 15-year Firm Transportation contract is
7 required to allow for cost recovery." What do you
8 mean by a 15-year firm transportation contract in
9 this sentence?
10 A. That statement identifies that typically
11 when you approach an interstate natural gas
12 pipeline --
13 Q. Uh-huh.
14 A. -- and ask for receipts of natural gas
15 at a particular location and delivery to your
16 location, they're looking for a 15-year contract to
17 assure their cost recovery.
18 Q. Are you talking about a new pipeline or
19 existing capacity?
20 A. Generally pipeline -- natural gas
21 pipelines aren't built with speculation in mind; so
22 all capacity should be considered new capacity on
23 that pipeline. There may be legs of a pipeline that
24 have some open capacity, but generally new capacity.

Q. Are you familiar with what's referred to as open season?

A. Sure.

Q. Would you agree that there are capacity releases on interstate pipelines?

A. Sure.

Q. And would you agree that you don't need a 15-year investment when you're procuring capacity that has been released?

A. Capacity that is released is being released by an entity that is involved in a long-term contract. They're just seeking to recover some part of their term through the release of that capacity; so, no, I would not agree.

Q. So is it your testimony that you cannot obtain capacity on any pipeline unless you commit to 15 years?

A. No. My testimony is that typically a 15-year transportation contract is required for the cost recovery of the pipeline.

Q. Okay. But a combined -- sorry, I didn't mean to interrupt you.

A. And I apologize. There are many creative ways to move gas on pipelines.

1 Interruptible transportation is the go-to, it seems
2 to be a preferred method of moving natural gas, using
3 release capacity is another way of doing that, but
4 none of those assure that you have space reserved for
5 you in the pipeline and only for you for a long
6 period of time.
7 Q. Let's make sure we're clear here. If
8 there is capacity -- existing capacity that is
9 released, a natural gas combined cycle power plant
10 can purchase that capacity and obtain firm
11 transportation, correct?
12 A. Yes. That's correct.
13 Q. And they can do it for a duration less
14 than 15 years, correct?
15 A. That's correct.
16 Q. Okay. And are you familiar with what is
17 called an operational flow order?
18 A. Yes.
19 Q. What is your definition of it?
20 A. Operational flow order is put out by a
21 pipeline when nearby conditions maybe for the day or
22 part of the day or week, or perhaps longer, the
23 pipeline can't meet its obligations to deliver gas
24 unless a certain behavior takes place, which may

1 include things such as rated takes, hourly takes
2 about a 24-hour period and that kind of thing.
3 Q. Would you agree that if you have firm
4 transportation, an operational flow order will not
5 impact you?
6 A. No.
7 Q. What is the basis of that understanding?
8 A. Well, I've been involved with firm
9 transportation contracts for decades and have been
10 subject to operational flow orders many times.
11 Q. What's --
12 A. I think my example of requiring rateable
13 takes throughout the day is a good example. Your
14 contract may say you have a maximum daily quantity of
15 X. You would like to take that off as a natural gas
16 utility, maybe more in the morning, or if you're an
17 electric generator at some specific time in the day
18 later in the day, but they can issue flow orders to
19 require you to not take that off at that particular
20 time yet still will hold you up on your maximum daily
21 quantity.
22 Q. Which pipelines are you referring to?
23 A. I've transported gas on a dozen
24 pipelines.

1 Q. Which pipelines can you identify that
2 they have issued operational flow orders that have
3 diminished the amount of gas you can take when you
4 had firm transportation?
5 A. Texas Eastern Transmission.
6 Q. Any others?
7 A. Tennessee Gas Pipeline and Dominion.
8 Q. I understand. When those orders were
9 issued, was there an outage in the pipeline?
10 A. There -- there can be. They can
11 issue -- they have the right to issue flow orders for
12 many reasons, which could include an outage in the
13 pipeline. This is not to be confused with force
14 majeure.
15 Q. Do you review pipeline tariffs?
16 A. Occasionally.
17 Q. Which ones?
18 MR. CONWAY: Well, I'm going to object
19 without some sort of context to link it up, without
20 which I don't think it's very understandable what the
21 point is where you're going with the line.
22 BY MR. OLIKER:
23 Q. The pipelines that you discussed that
24 you claim issued operational flow orders that

1 impacted your firm transportation rights, have you
2 reviewed their pipeline tariffs that are filed at
3 FERC?
4 A. Yes.
5 Q. So you would recognize them if I showed
6 them to you?
7 A. The tariffs?
8 Q. Yes.
9 A. Absolutely.
10 Q. Great. And your experience with the
11 capacity performance proposal, what level of
12 familiarity do you have with that?
13 A. At this point, very little. You're
14 referring to PJM, the power market's capacity
15 proposal. We've just shifted from natural gas
16 capacity, correct?
17 Q. Referring to the proposal that was
18 recently approved by FERC.
19 MR. CONWAY: PJM's proposal?
20 MR. OLIKER: Yes.
21 MR. CONWAY: So you're talking about
22 capacity performance resources, is that it?
23 MR. OLIKER: Uh-huh.
24 MR. CONWAY: You're not talking about

natural gas pipeline capacity anymore, right?

MR. OLIKER: Well, there -- it's incorporated into it; so I am and I'm not at the same time.

THE WITNESS: Well, I can respond, which is just repeating my earlier response, that I'm not very familiar with PJM's capacity performance.

BY MR. OLIKER:

Q. But you're familiar that the capacity product has been changed, correct?

A. PJM's capacity product has been, yes, I am.

Q. And you're familiar with what's called -- what's previously called an out-of-management-control event by a natural gas-fired generator?

A. Only loosely; so I won't call myself familiar with it at this point.

Q. What's your loose understanding?

A. On second thought, I don't think I have any understanding of it.

Q. Do you know how the capacity performance product has modified a generator's obligation to deliver electricity to the grid?

A. Only to the extent that a generator's fuel and ability to generate electricity must be there on days it's needed; therefore, backup fuel or something close to firm transportation is -- would be necessary to assure the reliable generation of electricity.

Q. And do you believe that a natural gas-fired generator that has either firm fuel -- strike that.

Do you believe that a natural gas-fired generator that has firm transportation or dual-fuel capability can provide a reliable baseload generation?

A. Are you asking that in the context of PJM's capacity reliability --

Q. In general and --

A. -- or just in general?

Q. -- within the context of PJM's capacity performance product.

A. I don't have enough information or knowledge about PJM's product, but I can say that having a backup fuel or having firm transportation is much more reliable than recallable capacity release and interruptible transportation.

1 Q. Okay. Do you know whether a natural
2 gas-fired generator can include the cost of acquiring
3 firm pipeline transportation in their offer into the
4 capacity market?
5 A. No.
6 Q. Do you know the amount of megawatts
7 related to gas generation that were cleared in the
8 most recent capacity performance transition auction?
9 A. No.
10 Q. In your model, I'm going to start with
11 Deposition Exhibit 2, I think we've established that
12 one of the inputs into the Aurora Model is the Henry
13 Hub prices, correct?
14 A. That's correct.
15 Q. And the prices are increasing, I
16 believe, in every year. Now, for purposes of making
17 these assumptions, does it matter -- if you were to
18 lower the starting number, say, the 2013 number of
19 $4.04 to $3.04, would that have an interpolation
20 effect on all the other numbers or is each number
21 determined independently?
22 A. Each number's determined independently.
23 Q. Okay. And am I correct if we -- looking
24 at the 2013 Forecast, for purposes of the nodal

1 pricing at the AD Hub, would you agree that the
2 Dominion South Point is probably the most relevant
3 number or natural gas price?
4 A. It's not the most relevant.
5 Q. What's the most relevant?
6 A. I believe in the question I was asked
7 before, we offer the Columbia Gas Transmission Pool.
8 Q. TCO Pool?
9 A. And we offer Columbia Gas Transmission
10 Delivered to an end user. Dominion South Point has
11 an effect in certain parts of the state.
12 Q. But to follow up on that, TCO Pool and
13 Dominion South Point are both more important than
14 Henry Hub?
15 A. Correct.
16 Q. Okay. If we compared Bletzacker No. 4
17 to Bletzacker No. 2, and we're looking at natural gas
18 prices here, would you agree that what we're seeing
19 is TCO Pool and Dominion South are both dropping
20 below the Henry Hub, at least in the first three
21 years?
22 A. That's correct.
23 Q. And what we're seeing is the effect of
24 basis differential, correct?

A. What we're seeing is defined as basis differential.

Q. Okay. And coupled with the lower natural gas prices in general, adding in the basis differential, that's what drives the power prices we're seeing in Exhibit 4 lower than what we're seeing in Exhibit 2?

A. As stated in my testimony, natural gas price is a primary driver of peak power prices in PJM, particularly AD Hub. So to the extent that you've included that, the answer is yes.

Q. And do you have -- would you agree that if we were to determine -- scratch that.

If we were to use the Fundamental Forecast provided in 2013 and then the Fundamental Forecast provided in 2015 as inputs to determine the profitability of the generating units that are proposed in this case, would you agree that the impact of using Exhibit No. 4 would be to show a lower level of profitability?

A. I can't say that unless I ran that analysis. That question's better left for Dr. Pearce.

Q. Okay. Fair enough.

MR. CONWAY: How much more do you have, Joe?

MR. OLIKER: We need a break soon?

MR. CONWAY: Well, I was going to offer to the witness if he'd like to take a break, we can. If he'd like to keep going --

THE WITNESS: I'm good if you guys are good.

MR. CONWAY: That's fine with me. I just wanted to take a moment to check.

MR. OLIKER: Give me another few minutes, and then I'll be at a good breaking point to then wrap it up hopefully afterward.

BY MR. OLIKER:

Q. Do you offer backcast -- first, do you know what a backcast is?

A. I know what my definition is. I'm not really aware what yours is.

Q. What's your definition?

A. Is comparing forecasted values to actual values.

Q. Do you often compare your Fundamental Forecasts to what the market actually does?

A. Considering that our forecast is

weather-normalized forecast and the actual market is anything but, no.

Q. Okay. Is there any sort of backcasting that's done with the Fundamental Forecasts that are produced?

A. No. The Fundamentals Forecast assembles the best available data that's available at the time and relies on that standard to produce the forecast going forward.

Q. Do you find that it is -- that the forecast is more reliable in the near term than it is in the long term?

A. Generally speaking, yes.

Q. You said "generally speaking." Are there any caveats you have to that?

A. I'd prefer to use the word indicative rather than reliable.

Q. Are you familiar at all with any of the fuel blends that any of the AEP generating stations utilize?

A. No.

Q. Are you familiar with something called a fuel de-rate?

A. I understand the concept, but not

1 specific to AEP plants.
2 Q. Okay. If you know, would Dr. Pearce be
3 more familiar with that?
4 MR. CONWAY: You're welcome to ask him.
5 THE WITNESS: I would hope he'd be more
6 familiar, but I really don't know.
7 BY MR. OLIKER:
8 Q. To jump around, earlier in your
9 testimony you indicated that you filed testimony for
10 AEP operating companies and others. I think it's
11 Page 2, Line 16. Who are the others you identify?
12 A. I was the vice-president, chief
13 operating officer of National Gas & Oil, a publicly
14 traded natural gas utility located in eastern Ohio.
15 I was responsible for management, performance audits
16 and other jurisdictional items, and that others
17 includes that.
18 Q. Anybody else besides that company?
19 A. No.
20 Q. Okay. And following up on the
21 discussion of the asymmetry of power prices, would
22 you agree that if the price of coal were to increase,
23 that could have an impact on power prices?
24 A. I would agree that an increase in the

price of coal has an increase in the price of power, but I don't understand the connection to the asymmetry.

Q. Okay. So to follow up on that, if the price of coal goes up, regardless of demand, the price of power will go up, correct, unless demand goes to zero, of course?

A. Of course. But certainly only at certain periods of the day of the week of the season.

Q. So, for example, if the price of coal went up and the price of natural gas stayed low, the off-peak price could stay the same because coal would be either on the margin or not clearing at all, right?

A. That's correct.

Q. Okay. So are you familiar with what happened in 2005 to 2008 with coal prices?

A. I would -- no.

Q. How -- do you look at the price of coal from time to time?

A. Yes.

Q. Have you looked at the price of coal over the past 10 years?

A. Yes, from time to time.

1 Q. Would you agree that there have been
2 spikes in the price of coal?
3 A. Yes, and the price of coal at the
4 mine-mouth less so than at delivered coal.
5 Q. Is it your testimony that price spikes
6 with coal are caused by transportation costs?
7 A. That can be a factor.
8 Q. They can't -- price spikes cannot be
9 caused by demand in general? In other words --
10 A. Price spikes are implying -- excuse me,
11 Joe -- price spikes, that phrase, is implying
12 something that is a considerable reaction over a
13 short period of time. Transportation -- rail
14 transportation interruptions, things such as that can
15 have a great deal of effect on a particular set of
16 units' spot prices.
17 But given that coal prices general
18 under -- or were under longer-term physical
19 contracts, to the extent that your coal supplier can
20 deliver coal to you, that is, in fact, a bit of a
21 hedge against changes in demand, and the coal pile
22 itself is a bit of a hedge against those changes in
23 demand.
24 Q. Okay. Before the recession happened in

1 2008, right before that occurred, would you agree
2 that coal prices were around double where they are
3 today?
4 A. Subject to check, I would agree that
5 they were higher.
6 Q. Okay. And what were the causes of those
7 prices, if you know?
8 A. Well, coal prices and many things --
9 many -- the prices of many items prerecession were
10 due to several reasons, including the cost of labor,
11 the cost of fuels, fuels being mining equipment
12 fuels, transportation equipment, diesel for rail
13 transportation. So there are many factors that would
14 contribute to the delivered cost of coal
15 prerecession.
16 Q. Some of the factors you just referenced
17 related to the mine-mouth cost, correct?
18 A. Yes.
19 Q. Okay. And is there any guarantee that
20 coal prices will not reach the 2007 prerecession
21 levels that we've previously experienced?
22 A. I know of no guarantees in fuels pricing
23 as to whether prices will be very high or very low.
24 Q. Okay. Maybe if we take a few-minute

1 break, I might be done. I'd like to go over my
2 notes.
3 MR. CONWAY: Okay. We'll take a break
4 if you promise you will be done when we come back.
5 MR. OLIKER: I just need a few minutes
6 to look.
7 MR. CONWAY: Okay. Fine. We're going
8 to take a short break now. Off the record.
9 (Recess taken.)
10 MR. CONWAY: Okay. We are back. Can
11 everyone hear?
12 MR. PRITCHARD: Yeah.
13 BY MR. OLIKER:
14 Q. Mr. Bletzacker, have you reviewed
15 something call the PJM Winter Report that was issued
16 following the polar vortex?
17 A. No.
18 Q. Where did you obtain the mmBtu prices
19 that you identify as $30 per mmBtu on Page 5?
20 A. From Ventyx Velocity Suite, a service
21 which captures that data from -- at least the
22 publicly available data from trade press.
23 Q. Do you review PJM reports at all?
24 A. I do give a cursory review to some PJM

1 reports.
2 Q. Which ones do you look at?
3 A. It's -- there is no consistency in which
4 ones.
5 Q. Do you agree that PJM -- well, ask it
6 this way: Did you review the PJM 2015 Winter Report,
7 which discussed the performance of generating units
8 during this past winter?
9 A. No.
10 Q. Have you reviewed any PJM reports that
11 discuss PJM plant performance?
12 A. Not that I can recall.
13 Q. Which type of PJM reports do you review?
14 A. Well, certainly I look at executive
15 summaries of auction results and follow-up auction
16 results.
17 Q. Anything else?
18 A. I will visit the PJM website to pick up
19 load data, pick up other -- other items that are
20 salient inputs or salient features to our long-term
21 model.
22 Q. Are you familiar with the Memorandum of
23 Understanding that has been entered into between PJM
24 and what's been referenced as the PJM pipelines?

A. No.

Q. Okay. Are you familiar with generation unit performance in the winter of 2014/2015 in PJM? When I'm referring to performance, I mean forced outage rates.

A. Only anecdotally.

Q. What is your anecdotal understanding?

A. My anecdotal understanding is that there were considerable outages due to the inability to deliver natural gas to certain gas-generating units that --

Q. Are you -- I'm sorry.

A. -- many gas plants were not available for the delivery -- for delivery of natural gas reasons, and certainly load was exceptional during that period at a time when storage inventories, of course, were also low.

Q. And was your past answer with respect to the 2014/'15 winter?

A. Yes, it was.

Q. Okay. And are you familiar with how coal-fired generation stations performed in the 2014/2015 winter with respect to forced outages?

A. Actually I'd like to make an amendment

1 to my answer.
2 Q. Okay.
3 A. I was referring to the polar vortex
4 winter, which would be '13/'14.
5 Q. Okay. So let's -- is your
6 understanding -- with respect to generation
7 performance in polar vortex winter of 2013/'14, is
8 your understanding anecdotal?
9 A. Yes.
10 Q. Okay. And am I correct that you do not
11 know the level of coal-fired forced outages in the
12 winter of 2013/'14?
13 A. You're correct.
14 Q. And are you familiar with how generation
15 performed in this past winter of 2014/'15?
16 A. No.
17 Q. Okay. The Fundamental Forecast that has
18 been marked as we have Exhibit 2, we have Deposition
19 Exhibit 4, what entities typically rely upon these
20 types of forecasts within AEP?
21 A. I believe that question has been asked
22 earlier, and so we would refer to that answer as
23 well. But, again, I believe that they should be
24 typified in all of our operating companies and all of

1 our different jurisdictions certainly for strategic
2 planning, for, you know, emissions mitigation
3 strategies.
4 They're available in widely used -- in
5 all elements of AEP, including river operations who
6 would like to know what coal units and where they're
7 located would be and paired with certain
8 environmental mitigation efforts and how that would
9 affect their river traffic.
10 Q. Am I correct that it doesn't matter if
11 an operating entity is regulated or unregulated for
12 purposes of relying on the Fundamental Forecast?
13 A. To my knowledge, my Fundamentals
14 Forecast is available to regulated operating
15 companies. I am not familiar with the use of my
16 forecast for AEP Gen Resources, which is an example
17 of an unregulated company.
18 Q. Okay. Let's drill it down just a little
19 bit more.
20 Do you know if AEP Generation Resources
21 has relied upon the 2013 Fundamental Forecast for
22 purposes of its business operations?
23 A. I don't know.
24 Q. And would your answer be the same for

1 the 2015 Fundamental Forecast?
2 A. Yes. My answer would be the same.
3 Q. Do you know what forecast of future
4 prices for power and natural gas AEP Generation
5 Resources relies upon?
6 A. No, I don't.
7 Q. Do you know if there are additional
8 forecasts they rely upon?
9 A. I -- I don't -- I don't know of what
10 forecasts they rely upon.
11 Q. Okay. Do you provide separate services
12 specifically for AEP Generation Resources from time
13 to time?
14 A. No.
15 Q. Does AEP Generation Resources, if you
16 know, have its own forecasting department?
17 A. They must. I would assume that they do,
18 but I don't know any specifics.
19 Q. Okay. Why do you say they must?
20 A. Well, it is -- it seems logical that it
21 would be necessary for them to have a forecast of
22 earnings.
23 Q. Uh-huh.
24 A. And other features that would not likely

1 rely on forecasts provided by others.
2 Q. But AEP Generation Resources would have
3 access to the 2013 and the 2015 Forecasts, did you
4 previously testify to that?
5 A. I don't think I previously testified to
6 that.
7 Q. Okay.
8 A. And I am unclear -- in our discussion, I
9 am unclear whether they have access to it or not. I
10 just don't recall.
11 Q. Okay. That's fair enough.
12 Are you familiar with the term uplift as
13 it would apply in the PJM energy markets?
14 A. I would need more clarification; so, no.
15 Q. Do you know -- have you ever heard of
16 the term balancing and operating reserves?
17 A. Yes.
18 Q. And with respect to balancing and
19 operating reserves, does uplift have meaning to you?
20 A. No.
21 Q. Okay. And looking -- sorry to go back
22 to Bletzacker Exhibit 2, the natural gas prices --
23 before we look at the actual prices, you indicated
24 that there are cycles with natural gas production,

1 correct?
2 A. Yes. That was in the context of periods
3 of gas prices that are due to structural reasons or
4 for cyclical reasons. I offered weather as a
5 cyclical reason for gas -- reason for gas prices to
6 be high or low.
7 Q. And the structural reason is what?
8 A. A good example of a structural reason
9 would be the finding cost of natural gas, finding and
10 production cost of natural gas.
11 Q. Okay. And another cyclical element
12 could be rig count, correct?
13 A. I wouldn't consider -- rig count is
14 indicative of future production, and rig count is
15 cyclical.
16 Q. Uh-huh. Why is it cyclical?
17 A. Because rig count generally reacts to
18 forward price. If the price meets the parameters
19 necessary to develop these reserves and put them to
20 market, rigs will be asked to -- contracted to drill
21 natural gas and/or oil wells or liquids -- natural
22 gas liquids wells.
23 Q. So as the price goes up, so does the rig
24 count, right?

A. Generally.

Q. Okay. And as the rig count goes up, so does production usually, correct?

A. Correct.

Q. And as production goes up, price can come down, correct?

A. Correct.

Q. So --

A. Thereby creating another cycle.

Q. Is it safe to say then prices may not necessarily go up from year to year?

A. I -- I'm -- I don't know how you can make that conclusion with that -- those -- the premise that you've offered.

Q. So what is the finding cost for natural gas in the Marcellus shale, for example?

A. There are many components to finding costs, and I'm concerned that you're interested in finding costs, you're interested in production costs, land and acquisition costs, the total all-in costs.

Q. But there is a threshold. Do you know what -- the total all-in cost threshold for profitability of a natural gas well in the Marcellus shale?

A. I'm un- -- I do not know that number specifically.

Q. As the price of natural gas, however, goes above that number, would you agree it's likely the rig count will increase?

A. It's likely that rig count will increase if those operators hedge that price, know they'll receive that price, and then they can develop those reserves.

Q. And there's no physical ceiling on the amount of rigs or wells that we could have in the Marcellus shale, correct?

A. Well, there certainly is. That's incorrect.

Q. And why is that incorrect?

A. It's incorrect because there is a physical limitation on the number of rigs available to drill in the United States.

Q. What is that amount, if you know?

A. Well, according to the Baker Hughes rig count, a reasonable person could expect that no more than 2,000 rigs could operate at any one time.

Q. Okay. And is it possible that when the price of natural gas rises above the all-in

1 production costs, that production will increase and
2 drive the price down to a level that is -- scratch
3 that question. One second.
4 (Pause.)
5 Q. Have any of your consultants forecasted
6 that $5 is a natural ceiling on the price of natural
7 gas?
8 A. I believe that $5 on a real-dollar basis
9 is considered a resistance point, a glass ceiling, if
10 you would, on natural gas prices.
11 Q. What do you mean by that?
12 A. It doesn't mean that natural gas prices
13 can't exceed $5 on a real-dollar basis, but there is
14 a considerable tranche of natural gas reserves
15 available to be developed for $5 on a real-dollar
16 basis in the view of some consultants.
17 Q. So what that means is that once gas gets
18 to that price, the rig count will increase, which
19 will drive storage injections up, correct?
20 A. Yes. It's correct to say that in this
21 example, $5 on a real-dollar basis, natural gas price
22 is the structural level for continued oil and gas --
23 or natural gas exploration. And to the extent that
24 there are any cycles, they will regress back to the

1 mean of that $5 price.
2 Q. So there is a possibility that once gas
3 reaches $5, we could see production levels increase
4 such that gas drops below $5, correct?
5 A. The market is capable of many different
6 cycles -- is capable of cycles for many different
7 reasons.
8 Q. And that's also because there's a lag
9 between production and rig count, correct?
10 A. Yes. Production -- or, rig count may
11 drop, production follows, especially considering the
12 rapid decline, price should then correct and the
13 cycle can start over again.
14 Q. So getting back to Exhibit 2, when we
15 look at your Henry Hub prices that increase every
16 year, this is no guarantee, correct?
17 A. What is no guarantee?
18 Q. That we will see price escalation in
19 every year.
20 A. You're reminded that you're looking at
21 nominal dollars here, not real dollars. If you were
22 to look at a real-dollar forecast or do the
23 conversions to real dollars, that escalation is quite
24 diminished.

1 Q. And that's because you assume an
2 inflation rate of somewhere between 2.30 and 2.60, I
3 think?
4 A. It's recorded in the output of these
5 exhibits.
6 Q. 2.10 to 2.60, I believe. But if we get
7 back to what we've seen over the last five years, you
8 would agree that we have not seen any sustained gas
9 prices of $5 even in nominal dollars, correct?
10 A. I'd like to mention that I don't see any
11 inflation factors as high as the 2.60 you've
12 recommended -- or, you've identified. Oh, I do, I'm
13 sorry, four down, I apologize.
14 Q. That's okay. Getting back to my
15 question: Over the last five years, we haven't seen
16 a sustained price of $5 even on a nominal basis,
17 correct?
18 A. How long do you consider to be
19 sustained?
20 Q. For longer than a month.
21 A. Oh, in the wintertime we have gas
22 prices, especially near the polar vortex period, that
23 average greater than $5.
24 Q. You would agree that the NYMEX only

1 cleared about $5 for one month in the past five
2 years?
3 A. I'm not referring to the NYMEX at all in
4 any of these answers. I'm referring to the spot
5 price of gas at the Henry Hub. The NYMEX, of course,
6 is referring to the futures contract in its
7 settlement or its daily trading.
8 Q. Okay. How many months has the spot
9 price exceeded $5, if you know?
10 A. For what period of time?
11 Q. Over the past five years.
12 A. I don't know.
13 Q. And would you agree that even below $5
14 gas, we can see cycles in which the price of gas
15 would have well been down?
16 A. Yes. And those cycles are due a lot to
17 weather variation.
18 Q. Okay.
19 A. A hot summer, a cool winter, anything
20 that deviates from normal will cause a weather-driven
21 cycle to sustain prices above or below that average
22 for the year.
23 Q. Okay. Now, we're almost done. Going to
24 Figure 3, can you explain to me why your testimony in

1 the model uses the high end of the consultancy
2 recommendation for a carbon tax comparison -- that's
3 your words, I believe -- and that's in the front end,
4 and the low end of the consultancy recommendation for
5 the years starting around 2031?
6 MR. CONWAY: Mr. Oliker, you're
7 referring to Figure 3 in Mr. Bletzacker's testimony?
8 MR. OLIKER: Yes.
9 THE WITNESS: On Page 9, of course. So
10 what is shown here is the range of consultants' view
11 of a CO2 forecast modeling proxy, sometimes called a
12 tax, I prefer to call it a burden on dispatch, and
13 then the red line is identifying our company's view
14 of what that burden should be.
15 These companies may have -- consultants
16 may have different start dates than we have. We have
17 predicted 2022 as a likely start date. And this
18 graph just -- this figure just simply shows where we
19 are within a range that was developed at this
20 particular time in 2013.
21 BY MR. OLIKER:
22 Q. And is there any specific reason why you
23 were at the high end in the beginning and the low end
24 in the out years?

A. No. We just list it as it falls.

Q. Okay. And if we were to look at the power prices that start in 2022 -- between 2021 and 2022, the on-peak's got about an $8.70 jump, and the off-peak between '21 and '22 jumps about $11 a megawatt hour, correct?

MR. CONWAY: Might I ask, what are you referring to now, Mr. Oliker?

MR. OLIKER: Bletzacker 2.

MR. CONWAY: And which areas on Bletzacker 2?

MR. OLIKER: 2021 and 2022 for PJM AEP Generation Hub, I believe that's the AD Hub.

MR. CONWAY: You're looking at the on-peak or the off-peak, or both?

MR. OLIKER: We did both; so we'll start over.

BY MR. OLIKER:

Q. We're on Bletzacker 2, and we're seeing a jump in power prices between 2021 and 2022, it's about $8, a megawatt hour, and 70 cents for the on-peak, right?

A. Correct.

Q. And then the off-peak is about $11.64,

1 correct?
2 A. Correct.
3 Q. And that's largely being driven by the
4 carbon tax or mitigation that you describe in your
5 testimony, correct?
6 A. That's -- that's correct. You can see
7 the effect is greater off-peak on the higher
8 emissions of coal units than on-peak from the
9 emissions of gas units.
10 Q. And am I correct that the carbon tax, in
11 your testimony, it works out is it $14 or $15 a
12 megawatt hour?
13 A. Well, the carbon tax in my testimony is
14 $15 a metric tonne. If we're to look at average
15 performance and emission rates of coal units, not gas
16 units, you would be about $15 a megawatt hour.
17 Q. Right. And that's because it depends on
18 the heat rate, right?
19 A. And many other things.
20 Q. Yes. And -- right. Okay. So depends
21 on the heat rate and largely the coal that you
22 burned?
23 A. Correct.
24 Q. Okay. So --

A. Btu value of coal.

Q. -- if I compare the megawatt hour price increase to whatever the megawatt hour cost increase for each plant, am I correct that the cost of these plants is rising faster than the power prices?

A. I don't understand your use of the phrase "the cost of these plants."

Q. I'm referring to the dispatch cost.

A. Yes. What I can say is that the dispatch costs are increased carrying the burden of $15 a metric tonne across all 20-some thousand of these units, all with unique dollar-per-megawatt-hour uplift and cost, and this is then aggregated for PJM AEP Gen Hub and expressed in the on-peak and off-peak prices.

Q. So am I correct then if we were to look at the profit of coal plants, '21 versus 2022, there's going to be an increase in market prices, but not necessarily an increase in margin for these plants?

A. I think, generally speaking, that would be correct.

Q. Okay. Thank you. I believe that those are all the questions I have, Mr. Bletzacker. Thank

you.

A. Thank you.

MR. PRITCHARD: This is Matt. I can go next unless we need to take a break.

MR. CONWAY: I don't think we need to take a break, Matt, but I was just going to ask who besides you has questions for Mr. Bletzacker.

MR. OLIKER: Actually I do have one more request, though, before we move on. I would like to see the WoodMackenzie and CERA and PIRA Forecasts that he relies upon. I think we asked for that in discovery.

MR. CONWAY: Well, you can talk to me about it offline, Joe.

MR. OLIKER: Okay.

MR. CONWAY: And we'll follow up on it as appropriate.

MR. OLIKER: Okay.

MR. CONWAY: I'm sorry to interrupt you on the phone. Besides Matt, is there anyone else that has questions for Mr. Bletzacker?

MR. VICKERS: Yes. This is Justin. I'll have maybe 10 minutes of questions.

MR. CONWAY: Okay. Anyone besides

Justin Vickers who has questions for Mr. Bletzacker, in addition to Matt Pritchard?

(No response.)

MR. CONWAY: Okay. Well, why don't we go ahead with you next, Matt, and then, Justin, you can clean up.

And then, Matt, how much time do you think you have? We're willing to continue going as necessary, but just in order to get some idea what we're up against.

MR. PRITCHARD: I'd like to get it all done within 30 minutes; probably 15, 20 minutes of my questions and another five to 10 of follow-up from all the stuff previously today.

MR. CONWAY: Okay. That sounds fine. Why don't we go forward then with Mr. Pritchard's examination.

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CROSS-EXAMINATION

BY MR. PRITCHARD:

Q. Good afternoon, Mr. Bletzacker. My name's Matt Pritchard, and I represent IEU Ohio. How are you doing?

A. Fine. Thank you. Good afternoon,

1 Mr. Pritchard.
2 Q. I have a couple questions that are in
3 the background portion of your testimony starting on
4 Page 1 and continuing on to Page 2.
5 My first question is on Page 1. You
6 indicate that you've implemented risk management
7 strategies previously, correct?
8 A. That's correct.
9 Q. And you list over-the-counter natural
10 gas futures, swaps, and options; is that correct?
11 A. That's correct.
12 Q. Could you describe what an
13 over-the-counter natural gas future is in the context
14 of risk management strategies?
15 A. Yes. It is a bilateral agreement where,
16 for example, one party agrees to pay a fixed price
17 when the other party agrees to pay a floating price.
18 It's not an exchange-traded instrument, it,
19 therefore, is subject to the financial wherewithal of
20 your counterparty.
21 So while it may achieve something close
22 to the same effect as an exchange-traded financial
23 instrument, you have counterparty risk associated
24 with it.

1 Q. Would an exchange-traded instrument be
2 something traded on NYMEX?
3 A. Yes, or ICE or anywhere -- or any other
4 exchange.
5 Q. And what kind of over-the-counter
6 natural gas futures did you previously utilize? I'm
7 just looking for some specific examples of when you
8 would have used this.
9 A. A specific example would be when you
10 would have a gas customer -- a gas marketing customer
11 that would like to have a -- for example, a fixed
12 price for a period longer than is available on the
13 New York Mercantile Exchange. So in those days,
14 you'd have to work with banks that would offer fixed
15 price contracts beyond those exchange-traded periods.
16 Q. And were these available to utilities or
17 customers as well?
18 A. Oh, they're available to both.
19 Q. And you also mentioned you had
20 previously implemented swaps in the context of risk
21 management. Could you describe what you mean by
22 "swaps"?
23 A. Well, a swap can have multiple meanings.
24 It is largely the same as an over-the-counter future,

1 but you may exchange gas at different locations; I
2 will buy gas at one location from you and you will
3 sell me gas at a different location. So a more
4 descriptive word would also include some locational
5 swaps as an example.
6 Q. And you also mentioned implementing
7 options in the context of risk management strategies.
8 What do you mean by "options"?
9 A. Selling or buying the option to put gas
10 to somebody or to call on gas from somebody.
11 Q. And are swaps and options also available
12 to customers as well as utilities?
13 A. Yes. They're available to anyone who
14 has the financial qualifications -- the necessary
15 financial qualifications.
16 Q. In your experience, have any large
17 industrial or commercial customers had the financial
18 wherewithal to enter into any or all of these three
19 items?
20 A. Yes.
21 Q. And you also mentioned -- mention on
22 Page 1 monetizing arbitrage opportunities using NYMEX
23 futures. Do you see that?
24 A. Yes, I do.

1 Q. What do you mean by "monetizing
2 arbitrage opportunities"? Could you explain that?
3 A. When you view a difference in
4 exchange-traded future prices from season to season
5 or month to month and you have a physical asset such
6 as a real storage field, you can hedge your purchase
7 price, hedge your sales price. Assuming that that
8 spread is greater than your operating cost of your
9 storage field, you can monetize those -- that
10 arbitrage opportunity with those futures contracts.
11 Same thing goes with different fuels, a
12 propane versus natural gas fractionation spread, a
13 dark spread, a spark spread. So spreads between
14 products and time spreads of one product against a
15 physical asset such as a storage example is a good
16 example of monetizing arbitrage opportunities.
17 Q. And you've also indicated that you've
18 purchased short-term and long-term natural gas supply
19 on Page 1, correct?
20 A. That's correct.
21 Q. How long was the longest natural gas
22 supply contract you've entered into?
23 A. Ten years.
24 Q. And when entering into short-term and

long-term natural gas supply contracts, did you ever establish a price by reference to the NYMEX?

A. Yes.

Q. How about to ICE?

A. No.

Q. And the -- the 10-year contract you had entered into, would you qualify -- or would you describe that as a large supply -- let me rephrase that.

Was the 10-year contract for a single customer or was it for a utility?

A. A single customer.

Q. What was the longest natural gas contract you've entered into on behalf of a utility company?

A. I have only done monthly hedges on behalf of a utility, nothing longer term than a monthly hedge, and that was prior to my --

Q. Was --

A. Excuse me.

-- that was prior to my experience at AEP.

Q. In your role at AEP, is it -- are you responsible for entering into long-term contracts for

natural gas supply?

A. No. My responsibility at AEP is only the creation of this long-term forecast.

Q. And next question begins with the reference at the bottom of Page 1 and continuing on to Page 2. There you reference that in a previous role you were vice-president and chief operating officer of National Gas. Do you see where that reference begins?

A. Yes, I do.

Q. And you indicate that you were responsible for natural gas pricing and risk management policies that ensured reliable delivery and managed customers' exposure to volatile commodity prices. Do you see where that's referenced?

A. Yes, I do.

Q. How did you price natural gas to ensure reliable delivery?

A. As the vice-president and chief operating officer of National Gas & Oil, we had a combination of firm transportation on interstate pipelines with gas available to be received, of course, to be delivered to our natural gas utility. We also had a considerable amount of local supply

1 that is gathered by our gathering system; so their
2 supply was certainly reliable.
3 The pricing was expressed to
4 customers -- on-system customers as a differential
5 from the NYMEX. That differential was intended to
6 include all of our costs of distributing the gas --
7 acquiring and distributing the gas to them. Natural
8 gas at that time was regulated for gas cost recovery,
9 but not regulated on base rates, at least regulated
10 by home rule.
11 Q. And in your answer there, you reference
12 that you established a NYMEX plus a price
13 differential. Did I understand that correctly?
14 A. Yes, for certain customers of the
15 National Gas & Oil system.
16 Q. How did that limit customers' exposure
17 to volatile commodity prices?
18 A. When a customer would know that it had a
19 fixed price, and regardless of their usage that price
20 would be fixed through our use of these financial
21 instruments, they were then put in the position to
22 put out long-term catalogs of their product with
23 fixed prices in them, and they had no worry of that
24 natural gas price changing throughout the period of

1 our contract with them.
2 Q. I have a couple follow-up questions.
3 When you reference the NYMEX, are you
4 referencing -- are you describing entering into some
5 sort of futures contract on NYMEX or some other NYMEX
6 price?
7 A. No. I'm referring only to the purchase
8 or the sale of the NYMEX, New York Mercantile
9 Exchange, natural gas futures contract.
10 Q. Does that price change on a daily basis?
11 A. Yes.
12 Q. And throughout today we've discussed two
13 of the Fundamental Forecasts you have prepared, the
14 2015 and the 2013 Forecasts. Are these indicative of
15 the normal duration of your forecasts in terms of how
16 many years you forecast out?
17 A. Yes. But for modeling purposes, you
18 can't stop a forecast at the end of, say, 2035 or
19 2046. There always are years beyond that published
20 forecast where prices are extended, which just
21 enables the model to put out credible prices in that
22 earlier period.
23 Put another way, there are end effects
24 on models, and so there are years that exist,

1 approximately five, beyond this typical duration of a
2 forecast.
3 Q. And we've also discussed -- let me, I
4 guess, clarify before I ask some more specifics. The
5 numbers in these two Fundamentals Forecasts, they've
6 been referenced today, they are not confidential, are
7 they?
8 A. No.
9 Q. And if we look at the 2015 Forecast and
10 we go to the section called Natural Gas, you
11 indicated that natural gas is ultimately an input
12 into the final run of the model, correct?
13 A. Yes. It's an input to all runs of the
14 model, and it certainly is an input into the final
15 forecast.
16 Q. And if you decrease the natural gas
17 price inputs into the forecast, would it also have a
18 corresponding decrease to the on-peak and off-peak
19 powers that are at the beginning of this document
20 under the label PJM - AEP Gen Hub?
21 A. It is generally likely that it would
22 lower PJM Gen Hub on-peak prices. It's not
23 necessarily correlated to off-peak power prices.
24 Q. In response to questions earlier today,

1 you had indicated that your Fundamental Forecast is
2 utilized throughout the company. Do you recall
3 that -- those questions and answers?
4 A. I do recall, and that is correct.
5 Q. Would AEP Ohio utilize your Fundamental
6 Forecast in their long-term forecast reports that
7 they file annually with the PUCO?
8 A. The long-term forecast is available to
9 them. I would assume that they would, yes.
10 Q. And for what other purposes do you -- is
11 your Fundamental Forecast relied upon?
12 A. There are many customers of the
13 Fundamentals Forecast, certainly each of the
14 jurisdictions across the country, all the operating
15 companies, but a primary customer of the forecast is
16 the Integrated Resource Planning Group. They're
17 generating IRP plans, they run the PLEXOS Model to
18 determine how AEP plants operate in this market
19 that's given to them in the Fundamental Forecast, and
20 then there are others.
21 Q. And I want to follow up on your answer.
22 You indicated that your 2015 Fundamental Forecast was
23 supplied to Virginia for their integrated resource
24 plan, correct?

A. It's subject to check, but it was supplied to our Integrated Resource Planning Group who does their modeling, and they submit an integrated resource plan. And I believe that Virginia was the first to -- or Appalachian Power Company on behalf of Virginia to receive this forecast in -- from the IRP Group.

Q. I have just a couple follow-up questions on the process of putting together the new Fundamental Forecast. I believe earlier you indicated that it takes several months to -- from start to finish to complete a Fundamental Forecast; is that correct?

A. That's correct.

Q. And you indicated that you think the Integrated Resource Planning Group in early July filed the IRP plan in Virginia, correct?

A. I don't know when they filed it, but I know that the prices were made available to them for use in that filing.

Q. So you would have began the process to compile the 2015 Fundamental Forecast somewhere at the beginning of 2015?

A. I don't know that I'd typify it as at

1 the beginning of 2015, but I think a few months
2 before its release would typify it well. It is very
3 iterative --
4 Q. Do you have a -- sorry. Go ahead.
5 A. It is a very iterative process, and I
6 have to consult with several subject matter experts,
7 including external consultancies, and that process is
8 a multi-month process.
9 Q. And I believe earlier today you
10 indicated that this Fundamental Forecast was created
11 due to -- I hope I phrase this right -- the cyclical
12 changes in natural gas market; is that correct?
13 A. Yes. That was a primary -- that was a
14 prime mover for generating a new forecast.
15 Q. Did the change in the natural gas market
16 prompt you to begin creating this new forecast, or
17 was it something else prompted you to create this
18 forecast?
19 A. I would say that this -- this
20 substantial change in the natural gas market is the
21 primary reason for changing -- or for creating a new
22 Long Term North American Energy Market Forecast.
23 Q. Let me phrase that a little bit
24 differently: Did you look at whether there were any

1 changes in the fund -- fundamental changes that would
2 require you to prepare a new Fundamental Forecast?
3 Did -- strike that.
4 Before you began preparing this
5 Fundamental Forecast, did the IRP Group come to you
6 and ask you for your most recent forecast?
7 A. No.
8 Q. So you -- after you were prompted
9 primarily by the changes in the natural gas market
10 once you had completed this forecast, just as a
11 general course of business, do you let the folks in
12 the IRP Group know that you had completed a new
13 forecast?
14 A. Yes. I was aware that they had -- they
15 had integrated resource plans due in several
16 jurisdictions, and I felt that the forecast should
17 be -- a new forecast should be created in light of
18 these natural gas developments and oil developments
19 that took place since last Thanksgiving or Christmas.
20 And I'm identifying that they did use this forecast
21 as the basis of the IRP probably in Virginia, subject
22 to check, but certainly in -- some time in July.
23 Q. And why didn't you provide it to
24 Dr. Pearce?

1 A. It wasn't withheld from Dr. Pearce; so I
2 don't agree with the premise that I didn't provide
3 it. This forecast is available to everyone across
4 this company.
5 Q. By "this company," you're referring to
6 AEP Service Corp.?
7 A. Correct.
8 Q. Did you have any conversations with
9 Dr. Pearce about -- that you were informing him that
10 you were working on a new Fundamental Forecast?
11 MR. CONWAY: Once again, I'd just point
12 out, Matt, I'm sure you listened before, that I have
13 an objection to delving into communications that
14 occurred in connection with our trial strategy that
15 were either with or under the supervision of the
16 attorneys. So if there is something outside of that
17 scope that falls within the ambit of your question,
18 then the witness is -- was permitted to go forward,
19 but otherwise I'll object and instruct him not to
20 answer.
21 MR. PRITCHARD: All right. Just
22 clarification, Dan, the witness testified that he
23 didn't provide it to Dr. Pearce.
24 MR. CONWAY: I'm just giving -- I

1 understand. I'm just telling you what my overarching
2 concern is, and --
3 MR. PRITCHARD: I understand. But he's
4 already testified that he hasn't given it to him.
5 MR. CONWAY: Right.
6 MR. PRITCHARD: So I -- I don't know
7 what your -- the objection is.
8 MR. CONWAY: It's a --
9 MR. PRITCHARD: He's already testified
10 on this point.
11 MR. CONWAY: If he's already testified
12 on it, then maybe you should move on, but my
13 objection and my comments are cautionary to the
14 witness, as well as to you.
15 MR. PRITCHARD: Okay. Well, I guess I
16 might have a series of questions with objections, but
17 we'll see if I can't navigate this confusing maze we
18 have here.
19 BY MR. PRITCHARD:
20 Q. You indicated in your prior answer that
21 the forecast was available to Dr. Pearce, as well, I
22 believe you indicated, to everyone in AEP Service
23 Corp.; is that correct?
24 A. That's correct.

1 Q. And is -- when you -- your reference to
2 it's available to everyone at AEP Service Corp. and
3 Dr. Pearce, is that due to the fact that it's been
4 posted, I believe you indicated earlier, on -- was it
5 SharePoint; is that correct?
6 A. I think the way to digest this would be
7 it is certainly available at a request of me for that
8 forecast. Everyone knows that we are responsible for
9 that forecast. And if there is a revised forecast, a
10 new forecast, I should say, we will make that
11 available to them.
12 We also have had a company intranet site
13 where that was published, prior forecast, and now a
14 SharePoint site where that will be published if it's
15 not published now. I really don't know.
16 Q. Did Dr. Pearce request any updated
17 Fundamental Forecast from you?
18 A. No.
19 Q. Earlier today you indicated that you had
20 had -- I don't want to put words in your mouth -- but
21 I believe it was a brief conversation with Dr. Pearce
22 where he had asked you about some of the underlying
23 assumptions in the 2013 Forecast, and you had helped
24 clarify some of those assumptions. Do you recall

1 that question and answer?
2 A. I don't recall. I'd have to have that
3 read back to me.
4 Q. Well, I'll just ask it again.
5 In regards to the 2013 Forecast, did
6 Dr. Pearce ask you about -- to help answer any of
7 these questions about some of the underlying
8 assumptions in the forecast?
9 MR. CONWAY: And, again, I'll just make
10 my objection that any inquiry into the work product
11 getting prepared for this litigation that was under
12 the instruction or supervision of counsel is out of
13 bounds, and just would instruct the witness not to
14 get into that kind of information in his response.
15 MR. PRITCHARD: I'll withdraw the
16 question. I believe it's already asked and answered
17 in the record. If you'd give me a second, I just
18 have to go through a few more of my notes from this
19 afternoon. I'm trying not to ask all my questions,
20 just seeing what's checked off.
21 (Pause.)
22 BY MR. PRITCHARD:
23 Q. Is the 2013 Fundamental Forecast that
24 was produced in discovery, is that the same

1 information that was provided to Dr. Pearce?
2 A. It is the same information that the
3 Integrated Resources Planning Group used to run its
4 PLEXOS Models, and that output was provided to
5 Dr. Pearce. I don't know what -- I don't know that
6 this Fundamentals Forecast was provided to
7 Dr. Pearce.
8 Q. Other than the Fundamental Forecast that
9 we -- that we've been referring to as the 2013
10 Fundamental Forecast, do you provide any additional,
11 more granular information to the Integrated Resource
12 Planning Group?
13 A. Yes.
14 Q. And specifically -- I guess I won't beat
15 around the bush -- do you provide hourly energy
16 forecasts to the Integrated Resource Planning Group?
17 A. No.
18 Q. Is the most granular level of
19 information that you provide them monthly?
20 A. That's correct.
21 Q. When you were preparing the 2015
22 Fundamental Forecast, when you set out to begin
23 the -- the -- preparing the forecast, did you expect
24 the on-peak and off-peak power prices to decrease

over the first few years of the Fundamental Forecast?

A. I think expect is too strong of a word. We weren't surprised to see that it did, though, given that -- our lowering of natural gas prices in the nearby.

Q. And with the revised fundamental -- sorry. Let me strike that.

Based on the results of the 2015 Fundamental Forecast, would you expect the results of the PLEXOS Model to be different?

A. Well, I do expect it to be different than the 2013 Forecast, because different inputs were offered.

Q. And you would agree with me that the power -- well, strike that.

Would you expect the dispatch of the PLEXOS Model, if it was rerun with the 2015 Fundamental Forecast, would you expect the -- Dr. Pearce's analysis to be affected if it was -- if the PLEXOS modeling was rerun?

A. Since I'm not an expert in PLEXOS modeling, I don't feel qualified to answer that. So my answer is I don't know.

Q. And when you were preparing the 2015

1 Fundamental Forecast, did you expect it to change
2 during the peer-review process which occurred during,
3 I believe you said, the April timeframe?
4 A. Restate the question, please.
5 Q. Sure. You testified earlier that you do
6 some initial runs of the -- of your Aurora Model, and
7 then you put it out for vetting from the other people
8 who helped provide inputs; is that correct?
9 A. I think that's a -- I don't know that I
10 agree with the characterization of that interaction.
11 We have many subject matter experts here. We've
12 identified many of them, not the least of which is
13 what our view is of the costs of certain types of
14 generation going forward.
15 It's important to make sure that there
16 have been no changes throughout this multi-month
17 process. Part of the, as you've described, vetting
18 process of this forecast is to make sure there aren't
19 no changes that we should note before we start
20 working through our final iterations.
21 Q. And I want to follow up with a few
22 questions about the capacity prices that are the
23 output of the model. I believe earlier you
24 referenced that the capacity value is -- that's

1 included in your Fundamental Forecast is calculated
2 based on the marginal unit. Is that a fair
3 characterization of what you testified to earlier?
4 A. Yes. That's correct.
5 Q. And your use of marginal unit, could you
6 describe that for me?
7 A. Those units that make little or no money
8 on the sale of energy need a capacity value listed in
9 this table to remain in existence.
10 Q. Are you familiar with the term in PJM
11 cost of new entry?
12 A. Yes.
13 Q. Are you familiar with the term net cost
14 of new entry?
15 A. Yes.
16 Q. Is it fair to characterize your capacity
17 value payment here as something similar to a net CONE
18 calculation?
19 A. No.
20 Q. Could you describe the difference
21 between the calculation in your Fundamental Forecast
22 and the net CONE calculation?
23 A. The concept of a net CONE value
24 identifies what the cost of a new entrant would be.

1 In PJM's example, it's a combustion turbine unit net
2 of money that would be -- revenue that would be
3 provided from energy sales.
4 Our capacity values are identifying what
5 values, what revenues are necessary for this
6 aggregation of all these marginal units that make
7 little or no money on energy sales that is necessary
8 to keep them available to meet the necessary reserve
9 margins.
10 Q. So your marginal unit from between
11 Fundamental Forecasts could -- the unit, that's --
12 the marginal unit could change, correct?
13 A. Yes. It changes quite a bit.
14 Q. And is it fair to say that the --
15 between the energy that's in your Fundamental
16 Forecast and your capacity value -- let me strike
17 that.
18 Are you familiar with the term missing
19 money in the context of PJM capacity revenue?
20 A. No. I'm not sufficiently aware of that
21 term.
22 Q. In the -- in response to some questions
23 earlier today, I believe you indicated that the 2015
24 Forecast used the same type of inputs and the same

1 type of adjustments as the 2013 Forecast, but some of
2 the adjustments were different; is that correct?
3 A. That's correct. But let me clarify that
4 the process is the same from 2013 to 2015. The
5 number of iterations that are necessary to get the
6 model to balance, so to speak, may change.
7 Q. You would agree that -- well, strike
8 that.
9 Is it fair to characterize your prior
10 testimony as indicating that the adjustment between
11 the 2013 and 2015 Forecasts were different?
12 A. I don't care to call the differences
13 between forecasts as adjustments. They're two
14 different forecasts prepared with the best available
15 information at the time they were created.
16 I'll use the term adjustments to be
17 iterations or reactions to, as an example, changes in
18 fuel consumption across the United States as, say,
19 for instance, natural gas generation is expanded or
20 contracted.
21 Q. Thanks for that clarification. I think
22 I'm on the same page as you, but let me just try to
23 confirm.
24 Is the 2015 Fundamental Forecast your

1 best estimate -- sorry. Strike that.
2 Is the 2013 -- just strike that whole
3 question.
4 Is the 2015 Fundamental Forecast your
5 best and most recent forecast of the future?
6 A. Yes.
7 Q. In response to a couple questions
8 earlier today, you had indicated that a return on
9 equity as an input to the model and that you had
10 referenced I think it was a consensus outlook of
11 external consultant forecasts; is that correct?
12 A. That's generally correct.
13 Q. Do you recall any of the return on
14 equity numbers that were supplied by these
15 consultancies?
16 A. Within an error of plus and minus three
17 or four percent, it was a 10 percent return.
18 Q. And when you say "plus or minus," were
19 some below 10 percent and some above 10 percent?
20 A. No. That's the error of my
21 recollection. But to give you an order of magnitude,
22 it is around a 10 percent return.
23 Q. And are you aware that there is a --
24 projections in this case by Dr. Pearce that assume a

five percent above and five percent below the base case?

A. I am.

Q. Were those numbers, the five percent -- did you -- sorry. Strike that.

Did you provide anything directly or indirectly on that -- what a five percent above and below would be?

A. Certainly to advance the notion of asymmetry, we created power prices associated with a load presumably due to weather of five percent above or below normal weather.

Your question wasn't specific as to providing to Dr. Pearce, and the answer is I provided that to Integrated Resource Planning folks for purposes of PLEXOS modeling, I'm sure.

Q. And just so I'm understanding that correctly, you provided the three forecasted numbers to the Integrated Resource Planning Group?

A. That's correct.

Q. And the five percent above base case forecast, where would I find that Fundamental Forecast?

A. That's not a Fundamentals Forecast.

1 That is a sensitivity where only load is changed, and
2 that results in a different change in price. It's
3 not a Long Term Fundamentals Forecast.
4 Q. Would the -- did you use the Aurora
5 Model to model those results?
6 A. No. We used outputs from the Aurora
7 Model, specifically those supply stacks that were
8 created in the base case to identify what power
9 prices would be, five percent above or below normal.
10 Q. And a follow-up from a prior question:
11 If we had -- if we looked at the 2015 Fundamental
12 Forecast and looked at the five percent above and
13 five percent below projections using the stacking
14 that you just reference, if we used the 2015 Forecast
15 instead of the 2013 Forecast, would the numbers you
16 provided to the Integrated Resource Planning Group
17 change?
18 A. The numbers would certainly change
19 because 2013 is a different forecast than 2015, but
20 the demonstration of asymmetry would remain.
21 Q. Did you say symmetry or asymmetry?
22 A. Asymmetry.
23 Q. And as we discussed earlier, the 2015
24 Forecast indicated lower PJM - AEP Gen --

1 THE COURT REPORTER: I'm sorry?
2 BY MR. PRITCHARD:
3 Q. I can start over.
4 In the 2015 Forecast under PJM - AEP Gen
5 Hub On-Peak Prices, because those on-peak prices in
6 the 2015 Forecast are less than the 2013 Forecast,
7 would you also expect the five percent above and five
8 percent below numbers, if we redid them for the 2015
9 Forecast, would they be less than the 2013 Forecast?
10 A. Generally speaking, the answer is yes.
11 Q. Have you done that analysis?
12 A. No.
13 Q. Why not?
14 A. My responsibility is to put out the Long
15 Term North American Energy Market Forecast with the
16 best available data. It's not necessarily required
17 that that includes a gap analysis on a sensitivity of
18 asymmetry.
19 Q. Are you aware that AEP Ohio has
20 presented projections to the Commission for reliance
21 in this case?
22 A. Yes.
23 Q. And you didn't think it would be helpful
24 to supply other members of AEP -- or, sorry, other

1 members of AEPSC your most recent Fundamental
2 Forecast, including a new analysis including the five
3 percent above and below?
4 A. I didn't say it wouldn't be helpful. I
5 said that my responsibility is to put out this Long
6 Term North American Energy Market Forecast, and gap
7 analysis to previous forecasts is something that is
8 very doable without my intercession.
9 Q. I think I just have one or two final
10 follow-up questions.
11 If in the -- let's just take the 2015
12 Fundamental Forecast. If you had input gas prices of
13 $3 instead of the values used in there, would you
14 agree with me that that would generally reduce the
15 PJM on-peak prices?
16 MR. CONWAY: Could I have the question
17 reread, please?
18 (Record read back as requested.)
19 MR. CONWAY: And this is -- the context
20 for this question is the natural --
21 MR. PRITCHARD: Is the 2015 Fundamental
22 Forecast under Natural Gas ($/mmBtu).
23 MR. CONWAY: So your question is assume
24 that all those values are $3 from top to bottom and

1 from left to right?
2 MR. PRITCHARD: Yes. Just a number
3 lower than what's in there.
4 BY MR. PRITCHARD:
5 Q. Was $3 to have a corresponding decrease
6 on the on-peak power pricing?
7 A. No.
8 Q. If the on-peak and off-peak prices were
9 decreased, would that have a corresponding increase
10 in their capacity forecasted price?
11 A. I don't know the answer to that. There
12 is not a direct relationship between those outcomes.
13 Q. I don't think I have any further
14 questions. Thank you for your time.
15 A. You're welcome. Thank you.
16 MR. CONWAY: Mr. Vickers, are you ready
17 to proceed?
18 MR. VICKERS: I am. I think clean-up
19 will be short.
20 - - -
21 CROSS-EXAMINATION
22 BY MR. VICKERS:
23 Q. Mr. Bletzacker, my name is Justin
24 Vickers. I'm representing the Environmental Law &

1 Policy Center. I have a few questions for you.
2 Earlier today, I believe with
3 Mr. Oliker, you were talking about the use of EIA and
4 Moody's data in the load forecast that then gets used
5 for your Fundamentals Forecast; is that right?
6 A. Yes. That's correct.
7 Q. And do you know what specific forecast
8 those entities put out that were relied on for the
9 2013 Fundamentals Forecast?
10 A. I don't know specifically which.
11 Q. They cover -- I'm sorry. Go ahead.
12 A. No. I've completed my thought. I don't
13 know specifically.
14 Q. All right. Do you -- was there a
15 specific timeframe that you know of where these
16 reports that had come out six months before the
17 Fundamentals Forecast was derived or a year before?
18 Do you have a sense of the timeframe?
19 A. Well, I can -- I am certain that they
20 are the most recent forecasts available from those
21 two organizations.
22 Q. And do you know what assumptions in
23 those forecasts were made about demand response -- to
24 incorporate demand response?

A. I don't -- I do not.

Q. Do you know what assumptions about energy efficiency they might have included?

A. I do not.

Q. And the same question about behind-the-meter generation or distributed generation, and I'd include combined heat power with that as well.

A. I do not.

Q. Are you at all familiar with Ohio's energy efficiency and peak demand reduction requirements, statutory requirements?

A. No.

Q. Do you know if the load forecast that eventually went into the Fundamentals Forecast incorporated energy efficiency at levels that would comply with those laws?

A. I don't have any specific knowledge that that had occurred.

Q. Are you familiar with voltage optimization?

A. I believe so. Are you referring to what's commonly called VAR?

Q. Yeah. Yeah. That would be the same

thing.

A. Yes.

Q. Do you know whether the load forecast that was used included any implementation of VAR in the AEP Ohio service territory?

A. I'm not specifically aware; so, no, I do not.

Q. So continuing to talk a little bit about the demand forecast, in terms of what would correspond to -- I'm going to try and do this without introducing an exhibit, but if this is at all unclear then we can work off the document.

Would the MAAC-PJM West area, would that include AEP Ohio?

A. I don't know the answer to that.

MR. VICKERS: Can we go off the record?

(Discussion held off the record.)

(EXHIBIT MARKED FOR IDENTIFICATION.)

BY MR. VICKERS:

Q. Mr. Bletzacker, counsel has just handed you what's been marked as Bletzacker Deposition Exhibit 5. It's a response to an interrogatory that includes the load assumptions utilized for the AuroraXMP Electric Market Model.

1 I'm just trying to get to understand the
2 area names. So if you look at Column A. Do you see
3 the list of area names there?
4 A. Yes, I do.
5 MR. CONWAY: Before we go any further,
6 Mr. Vickers, could we just also add for the record,
7 and for anyone else who reads the deposition
8 afterwards, the interrogatory reference that you
9 provided off the record to us for this document?
10 MR. VICKERS: Okay. Yeah. Absolutely.
11 So this is in response to IGS Interrogatory 2-010, D,
12 as in dog.
13 MR. CONWAY: Thank you.
14 MR. VICKERS: You're welcome.
15 BY MR. VICKERS:
16 Q. Mr. Bletzacker, looking at these areas,
17 I'm just trying to understand which, if any, of these
18 areas would include the PJM AEP zone.
19 A. The ECAR area names would include the
20 PJM zone.
21 Q. And would that be for -- in terms of
22 Ohio, would that be all three of them or a specific
23 one?
24 A. Subject to check, that would be -- I

1 don't know. I don't know specifically, but it's one
2 of those three.
3 Q. Okay. And are these -- what is the
4 derivation of these names? What is the body that
5 defines these names?
6 A. It is largely a model-naming convention
7 that came -- probably came to us from Aurora, itself,
8 but, again, that is subject -- also subject to check.
9 Q. Okay. I want to make sure I cover
10 everything else.
11 If you could look at Exhibit 2. This is
12 the 2013 Fundamentals. There in that spreadsheet, if
13 you go over to -- looks like it starts around Column
14 AH, you have the emissions for -- emission values for
15 SO2, NOx Annual, NOx Summer. Do you see those?
16 MR. CONWAY: Should be the fourth sheet.
17 THE WITNESS: Yes. I see them.
18 BY MR. VICKERS:
19 Q. And the value for the SO2 and the two
20 NOxes are zero for all of the years; is that correct?
21 A. That's correct.
22 Q. Are those values inputs or outputs of
23 the model?
24 A. They're inputs.

1 Q. And what was the basis for assuming
2 those to be zero?
3 A. Multiple iterations or multiple runs of
4 Aurora that through the process of new builds and
5 retirements, and then viewing what the SO2 and NOx
6 emission levels would be, recognizing that that then
7 creates little value in the terms of credits or --
8 Q. So it's not assuming a change in
9 regulation of any kind, it's just by virtue of what
10 the Aurora Model put out?
11 A. That's correct. Through iterations of
12 the Aurora Model, the value in any given year for
13 these credits is zero.
14 Q. Could we turn to Page 10, Lines 3 and 4?
15 MR. CONWAY: Are you referring to the
16 testimony at this point?
17 MR. VICKERS: Yes, sorry, of your
18 testimony.
19 THE WITNESS: Yes.
20 BY MR. VICKERS:
21 Q. Here you're discussing the five percent
22 on either side change in load; is that correct?
23 A. That's correct.
24 Q. And you write that this was done under

1 the conservative assumption that all inputs,
2 including fuel prices, remained unchanged except
3 load. Do the conservative assumptions for inputs
4 remaining unchanged, does that include the capacity
5 prices, or will the capacity prices be affected by
6 this change in load?
7 A. Given that capacity prices are an output
8 of the model, but no model was run here, the Aurora
9 Model did not -- was not the engine for generating
10 these power prices five percent high and five percent
11 load -- low. We looked at --
12 Q. So --
13 MR. CONWAY: Just a second, Mr. Vickers.
14 I don't know that he was finished with his response.
15 MR. VICKERS: Absolutely. Sorry. It
16 can be hard to tell on the phone. Go ahead.
17 THE WITNESS: Thank you. This sentence
18 should be interpreted as saying the only thing that
19 was changed was load five percent high, five percent
20 low, presumably due to weather. All other inputs
21 were the same.
22 BY MR. VICKERS:
23 Q. Do you have an opinion about whether the
24 high or the low -- the high or the low load forecast,

that change in five percent, is -- whether one of those is more or less likely the next 20 years?

A. I have no opinion about that.

Q. Are you familiar with PJM load forecasts over, let's say, the last five years? Do you look at those?

A. Only vaguely familiar.

Q. Do you know -- do you have any sense of whether -- when you look at the forecasts versus the actuals, whether PJM has tended to underestimate or overestimate load across PJM?

A. I have no knowledge of that.

Q. The 2015 Fundamentals Forecast that we've been discussing today, does that forecast rely on the same load assumptions as the 2013 Fundamentals Forecast, or are those different?

A. They are different.

Q. And what is the difference?

A. Well, the primary difference is that the most recent Fundamentals Forecast relies on the most recent load projections; so it's a different vintage of load projections.

Q. Do you have any sense of whether those load projections are higher or lower than was -- what

was used in the 2013 Forecast?

A. I don't have a quantitative sense as to what that answer would be.

Q. And are you aware that AEP Ohio commissioned a study completed in early 2014 analyzing the market potential for cost-effective energy efficiency in its service territory?

A. I am unaware.

Q. That's all the questions I have.

MR. CONWAY: Thank you.

MR. VICKERS: Thank you.

MR. CONWAY: Is that it, or is there anyone else that has questions?

(No response.)

MR. CONWAY: Okay. Well, I think the deposition then is concluded. We will not waive signature.

(Thereupon, the deposition concluded at 5:32 p.m. Signature not waived.)

- - -

State of Ohio :
: SS:
County of :

I, Karl R. Bletzacker, do hereby certify that I have read the foregoing transcript of my deposition given on Monday, September 21, 2015; that together with the correction page attached hereto noting changes in form or substance, if any, it is true and correct.

_____
Karl R. Bletzacker

I do hereby certify that the foregoing transcript of the deposition of Karl R. Bletzacker was submitted to the witness for reading and signing; that after he had stated to the undersigned Notary Public that he had read and examined his deposition, he signed the same in my presence on the _____ day of _____, 2015.

_____
Notary Public

My commission expires _____, _____.

- - -

CERTIFICATE

State of Ohio :
: SS:
County of Muskingum :

I, Carolyn D. Ross, Registered Professional Reporter and Notary Public in and for the State of Ohio, duly commissioned and qualified, certify that the within named Karl R. Bletzacker was by me duly sworn to testify to the whole truth in the cause aforesaid; that the testimony was taken down by me in stenotype in the presence of said witness, afterwards transcribed upon a computer; that the foregoing is a true and correct transcript of the testimony given by said witness taken at the time and place in the foregoing caption specified and completed without adjournment.

I certify that I am not a relative, employee, or attorney of any of the parties hereto, or of any attorney or counsel employed by the parties, or financially interested in the action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 24th day of September, 2015.

_____
Carolyn D. Ross, Registered Professional Reporter and Notary Public in and for the State of Ohio.

My commission expires April 3, 2019.

(CDR-79223)

ARMSTRONG & OKEY, INC.
Registered Professional Reporters
222 E. Town St. - 2nd Floor
Columbus, Ohio 43215
614/224-9481

September 24, 2015

Mr. Karl R. Bletzacker
% Mr. Steven T. Nourse, Esq.
American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215

Re: In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter Into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider; and In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority

Dear Mr. Bletzacker:

Enclosed is the transcript of your deposition taken on September 21, 2015, for examination pursuant to 4901-1-21(K) of the Ohio Rules of Practice before the Public Utilities Commission of Ohio.

The rule requires that your deposition be read by or to you. Any changes in form or substance which you desire to make shall be entered by me with a statement of the reasons given for making them.

If your deposition is not signed within 10 days of its submission to you, I am required to sign it and state the fact of the refusal to sign with the reason, if any, given therefor; and the deposition may then be used as though signed, unless on a motion to suppress the Commission holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part. By copy of this letter I am advising the attorneys in the case of the submission of your deposition.

Please have your deposition signed in the presence of a Notary Public and return to us by certified mail.

Thank you for your promptness in this matter.

Sincerely,

ARMSTRONG & OKEY, INC.

cc: Ms. Williams/Mr. Oliker/Ms. Bair
Mr. Pritchard/Ms. Hussey/Mr. Vickers

State of Ohio :
: SS:
County of :

I, Karl R. Bletzacker, do hereby certify that I have read the foregoing transcript of my deposition given on Monday, September 21, 2015; that together with the correction page attached hereto noting changes in form or substance, if any, it is true and correct.

_____
Karl R. Bletzacker

I do hereby certify that the foregoing transcript of the deposition of Karl R. Bletzacker was submitted to the witness for reading and signing; that after he had stated to the undersigned Notary Public that he had read and examined his deposition, he signed the same in my presence on the _____ day of _____, 2015.

_____
Notary Public

My commission expires _____, _____.

- - -

ERRATA SHEET

Please do not write on the transcript. Any changes in form or substance you desire to make should be entered upon this sheet.

TO THE REPORTER:

I have read the entire transcript of my deposition taken on the _____ day of _____, _____, or the same has been read to me. I request that the following changes be entered upon the record for the reasons indicated. I have signed my name to the signature page and authorize you to attach the same to the original transcript.

Page	Line	Change	Reason

Date _____ Signature: _____

CERTIFICATE

State of Ohio :
: SS:
County of Muskingum :

I, Carolyn D. Ross, Registered Professional Reporter and Notary Public in and for the State of Ohio, duly commissioned and qualified, certify that the within named Karl R. Bletzacker was by me duly sworn to testify to the whole truth in the cause aforesaid; that the testimony was taken down by me in stenotype in the presence of said witness, afterwards transcribed upon a computer; that the foregoing is a true and correct transcript of the testimony given by said witness taken at the time and place in the foregoing caption specified and completed without adjournment.

I certify that I am not a relative, employee, or attorney of any of the parties hereto, or of any attorney or counsel employed by the parties, or financially interested in the action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 24th day of September, 2015.

Carolyn D. Ross

Carolyn D. Ross, Registered Professional Reporter and Notary Public in and for the State of Ohio.

NOTARY PUBLIC STATE OF OHIO

My commission expires April 3, 2019.

(CDR-79223)

This foregoing document was electronically filed with the Public Utilities

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in

Case No(s). 14-1693-EL-RDR, 14-1694-EL-AAM

Summary: Deposition of Karl R. Bletzacker electronically filed by Mr. Tony G. Mendoza on behalf of Sierra Club