

1 Indianapolis, Indiana
2 July 29, 2010
3 9:30 A.M. (EDT)
4
5 (Reporter marked documents for
6 identification as Petitioner's
7 Exhibit Nos. BB; CC; CC-1; CC-2;
8 Confidential CC-3; DD; DD-1
9 through DD-6, inclusive; EE; FF;
10 GG; GG-1 Revised; GG-2 Revised;
11 HH; II; JJ; KK; Confidential KK-1;
12 Confidential KK-2 and LL)
13
14 (Reporter marked document for
15 identification as Public's Exhibit
16 No. RLK-S2)
17
18 (Reporter marked document for
19 identification as Intervenor's -
20 CAC Exhibit No. AA)
21
22 (Reporter marked documents for
23 identification as Intervenor's -
24 ITA Exhibit Nos. AIM-1 through
25 AIM-3, inclusive)

1 JUDGE STORMS: This is an
2 evidentiary hearing before the Indiana Utility
3 Regulatory Commission in a cause docketed
4 before the Commission as Cause No. 43501. The
5 caption is "The Verified Petition of Duke
6 Energy Indiana, Incorporated requesting the
7 Indiana Utility Regulatory Commission to
8 approve an alternative regulatory plan
9 pursuant to Indiana Code 8-1-2.5-1, et seq.,
10 for the implementation of an electric
11 distribution system "Smart Grid" and advanced
12 metering infrastructure, distribution
13 automation investments, and a distributed
14 renewable generation demonstration project,
15 for approval of new depreciation rates for
16 electric distribution plant, for a waiver of
17 the provisions of 170 IAC 4-1, et seq., and
18 for associated accounting and rate recovery
19 mechanisms, including a ratemaking proposal to
20 update distribution rates annually and a lost
21 revenue recovery mechanism, in accordance with
22 Indiana Code 8-1-2-42(a) and Indiana Code
23 8-1-2.5-1, et seq., and a preliminary approval
24 of the estimated costs and scheduled
25 deployment of the Company's Smart Grid

1 initiative."

2 Notice of the time and place of
3 the hearing was given as provided by law by
4 publication in Marion County in the
5 Indianapolis Star and in Hendricks County in
6 the Weekend Flyer and the Hendricks County
7 Republican.

8 Each of said newspaper is a
9 newspaper of general circulation, printed and
10 published in the English language in their
11 respective counties, and said publications
12 were made ten days prior to the date of the
13 evidentiary hearing.

14 The proofs of publication of the
15 notices have been received by the Commission
16 and are now incorporated into the record of
17 this cause by reference and placed in the
18 official files of the Commission.

19 Notice has also been given to the
20 Office of Utility Consumer Counselor and other
21 interested parties.

22 May we have appearances of
23 counsel, please?

24 MS. HERRIMAN: Yes. Thank you,
25 Your Honor. On behalf of Petitioner, Duke

1 Energy Indiana, please accept the appearance
2 of Beth Herriman and Kelley Karn, 1000 East
3 Main Street, Plainfield.

4 MR. AIKMAN: Good morning, Your
5 Honor. Appearing on behalf of the Intervenor,
6 the Indiana Telecommunications Association,
7 Richard E. Aikman, Jr. of the law firm Stewart
8 & Irwin, Indianapolis.

9 MS. TERRY: Thank you, Your Honor.
10 Appearing on behalf of the Intervenor, Duke
11 Energy Industrial Group, Jennifer Terry of the
12 law firm Lewis & Kappes, Indianapolis,
13 Indiana.

14 MR. BOEHM: Good morning, Your
15 Honor. Appearing on behalf of the Kroger
16 Company, Kurt Boehm with the law firm of
17 Boehm, Kurtz & Lowry, Cincinnati, Ohio.

18 I'd also like to enter the
19 appearance of John Cook of Franklin, Indiana.

20 MS. BECKER: Appearing on behalf
21 of the Intervenor, Nucor Steel Indiana, a
22 division of Nucor Corporation, Anne Becker
23 with the law firm of Stewart & Irwin,
24 Indianapolis, Indiana.

25 MR. POLK: Appearing on behalf of

1 the Intervenor, Citizens Action Coalition of
2 Indiana, Jerome Polk of the firm Polk &
3 Associates, LLC, Suite 101 West Ohio Street --
4 101 West Ohio, Suite 2000, Indianapolis,
5 Indiana.

6 MR. TOLLIVER: Good morning, Your
7 Honor. Terry Tolliver, Indiana Office of
8 Utility Consumer Counselor, appearing on
9 behalf of the Public.

10 JUDGE STORMS: Okay, and in
11 reading this caption, it just occurred to me
12 that the nature of this proceeding has changed
13 a bit since it was initially filed with the
14 numerous requests and as the record reflects
15 and as was reflected through the issuance of a
16 Commission order.

17 The Commission previously issued
18 an order in this proceeding. It was
19 subsequently reopened to allow for the
20 submission of additional supplemental
21 testimony which brought us back to this
22 proceeding today. So, the nature of the
23 proceeding has changed a bit. I think it has
24 narrowed a bit as reflected in the
25 supplemental testimony.

1 So, for purposes of today, we will
2 start with the Petitioner and allow the
3 Petitioner to submit their supplemental
4 testimony into the record. I believe Mr. Polk
5 has a few questions for a couple of the
6 witnesses as does the Commission potentially,
7 and then we will just continue around. I
8 believe that's the only cross-examination that
9 has not been waived has been by -- is limited
10 to the CAC.

11 So, Petitioner, you may present
12 your case-in-chief or your supplemental
13 testimony.

14 MS. HERRIMAN: Thank you, Your
15 Honor. What I'll do first is enter into the
16 evidence all of the testimony from our
17 witnesses that will not be taking the Stand
18 today.

19 Petitioner would move for the
20 admittance of Petitioner's Exhibit BB, the
21 supplemental testimony of Jim Stanley;
22 Petitioner's Exhibit DD, the supplemental
23 testimony of Don Schneider, Jr. and
24 Petitioner's Exhibits DD-1, DD-2, DD-3, DD-4,
25 DD-5 and DD-6; Petitioner's Exhibit FF, the

1 supplemental testimony of Casey Mather, and
2 Petitioner's Exhibit HH, the supplemental
3 testimony of Kent Freeman.

4 Also, at this time, I'll move for
5 admittance into the record of what's been
6 marked as Petitioner's Exhibit KK, which is
7 the Petitioner's response to the Commission's
8 July 9th Docket Entry and attached Exhibits
9 Confidential KK-1 and Confidential KK-2, as
10 well as Petitioner's Exhibit LL, which
11 consists of Petitioner's response to the
12 Commission's July 23rd Docket Entry.

13 JUDGE STORMS: Is there any
14 objection?

15 If not, we'll show each of these
16 exhibits admitted into this cause without
17 objection.

18 MS. HERRIMAN: Thank you, Your
19 Honor.

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1 (PETITIONER'S EXHIBIT NO. BB,
2 BEING THE PREFILED SUPPLEMENTAL
3 TESTIMONY OF MR. JIM L. STANLEY;
4 PETITIONER'S EXHIBIT NO. DD, BEING
5 THE PREFILED SUPPLEMENTAL
6 TESTIMONY OF MR. DONALD L.
7 SCHNEIDER, JR., WITH EXHIBIT NOS.
8 DD-1 THROUGH DD-6, INCLUSIVE,
9 ATTACHED THERETO; PETITIONER'S
10 EXHIBIT NO. FF, BEING THE PREFILED
11 SUPPLEMENTAL TESTIMONY OF MR.
12 CASEY MATHER; PETITIONER'S EXHIBIT
13 NO. HH, BEING THE PREFILED
14 SUPPLEMENTAL TESTIMONY OF MR. KENT
15 K. FREEMAN; PETITIONER'S EXHIBIT
16 NO. KK, BEING A DOCUMENT ENTITLED
17 "SUBMISSION OF DUKE ENERGY
18 INDIANA, INC.'S RESPONSE TO THE
19 COMMISSION'S DOCKET ENTRY DATED
20 JULY 9, 2010", AND PETITIONER'S
21 EXHIBIT NO. LL, BEING A DOCUMENT
22 ENTITLED "SUBMISSION OF DUKE
23 ENERGY INDIANA, INC.'S RESPONSE TO
24 THE COMMISSION'S DOCKET ENTRY
25 DATED JULY 23, 2010", ADMITTED

1 INTO EVIDENCE.)
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INTO EVIDENCE.)

1 (PETITIONER'S CONFIDENTIAL EXHIBIT
2 NO. KK-1 AND PETITIONER'S
3 CONFIDENTIAL EXHIBIT NO. KK-2,
4 BEING CONFIDENTIAL DOCUMENTS
5 ASSOCIATED WITH DUKE ENERGY
6 INDIANA, INC.'S RESPONSE TO THE
7 COMMISSION'S DOCKET ENTRY DATED
8 JULY 9, 2010, **ADMITTED INTO**
9 **EVIDENCE ON A CONFIDENTIAL BASIS.)**

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1 MS. HERRIMAN: At this time, the
2 Petitioner calls its first witness, Mr. Don
3 Denton.

4 JUDGE STORMS: Please raise your
5 right hand to be sworn.

6

7 (OATH DULY ADMINISTERED TO WITNESS)

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9 DONALD H. DENTON, III, a witness appearing on
10 behalf of the Petitioner,
11 on both Direct and
12 Rebuttal, having been
13 first duly sworn,
14 testified as follows:

15

16 DIRECT EXAMINATION,

17 QUESTIONS BY MS. HERRIMAN:

18 Q Good morning, Mr. Denton.

19 A Good morning.

20 Q Please state your name for the record and
21 spell it.

22 A Donald Hemphill Denton, the III, D-o-n-a-l-d
23 H-e-m-p-h-i-l-l D-e-n-t-o-n.

24 Q Please state your employer and your current
25 position with that employer.

1 A Duke Energy; General Manager, Strategic
2 Planning or Smart Grid Strategy and Planning.

3 Q Thank you.

4 You have before you a document
5 that's been marked for identification purposes
6 as Petitioner's Exhibit CC; Petitioner's
7 Exhibits CC-1, CC-2 and Confidential Exhibit
8 CC-3 as well as Petitioner's Exhibit II.

9 Are those copies of your prefiled
10 direct and rebuttal testimony in this cause?

11 A They are.

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

14 A I do not.

15 Q If I were to ask you the same questions today,
16 would your answers be the same?

17 A Yes, they would.

18 Q Do you adopt those Petitioner's exhibits as
19 your sworn testimony in this cause?

20 A Yes, I do.

21 MS. HERRIMAN: Your Honor,
22 Petitioner offers into evidence Petitioner's
23 Exhibits CC, CC-1, CC-2, Confidential Exhibit
24 CC-3 and Exhibit II.

25 JUDGE STORMS: Okay. Is there any

1 objection?

2 If not, we'll show each of those
3 exhibits admitted into this cause.

4 MS. HERRIMAN: Thank you, Your
5 Honor.

6
7 (PETITIONER'S EXHIBIT NO. CC,
8 BEING THE PREFILED SUPPLEMENTAL
9 TESTIMONY OF MR. DONALD H. DENTON,
10 III, WITH EXHIBIT NOS. CC-1 AND
11 CC-2 ATTACHED THERETO, AND
12 PETITIONER'S EXHIBIT NO. II, BEING
13 THE PREFILED SUPPLEMENTAL REBUTTAL
14 TESTIMONY OF MR. DONALD H. DENTON,
15 III, ADMITTED INTO EVIDENCE.)

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1 (PETITIONER'S EXHIBIT NO.
2 CONFIDENTIAL CC-3, BEING A
3 CONFIDENTIAL DOCUMENT ASSOCIATED
4 WITH THE PREFILED SUPPLEMENTAL
5 TESTIMONY OF MR. DONALD H. DENTON,
6 III, **ADMITTED INTO EVIDENCE ON A**
7 **CONFIDENTIAL BASIS.**)
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1 MS. HERRIMAN: Mr. Denton is now
2 available for cross-examination.

3 JUDGE STORMS: Okay. Mr. Polk,
4 your witness.

5 MR. POLK: Thank you, Your Honor.

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7 **CROSS-EXAMINATION OF MR. DONALD H. DENTON, III,**

8 **QUESTIONS BY MR. POLK:**

9 Q Good morning, Mr. Denton.

10 A Good morning.

11 Q Welcome back to Indiana.

12 A Thank you.

13 Q In your supplemental rebuttal testimony, on
14 the bottom of Page 4, you state that the
15 Company believes that there are numerous
16 other -- that the -- there are numerous other
17 benefits to the customers from this proposal
18 that will -- and those benefits will
19 ultimately benefit your customers.

20 Are those benefits guaranteed in
21 any way?

22 A Well, as we are trying to prove the case of
23 Smart Grid and the benefits to the customer at
24 this time, one of the things in response to
25 the Commission's order was that we wanted to

1 come back, do this initial deployment and
2 prove the concepts that have been presented as
3 a part of the original filing in the business
4 case.

5 Q So, would it be fair to say that this proposal
6 is really a research and development, proof of
7 concept project?

8 A Well, as requested -- we're requested to come
9 back and prove the benefits to the consumers,
10 and so, as we move forward in looking at the
11 various benefits that were presented in the
12 business case, we move forward to prove those
13 out as a part of this initial deployment.

14 Q Okay. Has the Company quantified the benefits
15 that will be derived from this pilot?

16 A We have looked at the original business case.
17 We have not created a new business case for
18 the initial deployment, but what we have done
19 is outline what we believe the benefits would
20 be, and as we move forward is to measure and
21 verify the quantity of those benefits.

22 Q Would it be fair to say that the Company has
23 not performed a total resource cost test or
24 TRC test for this pilot?

25 A For the pilot, what we have done is looked at

1 the capital cost and not completed a, what I
2 would consider, a TRC analysis, if you will,
3 but we have moved, basically, from our initial
4 cost-benefit analysis that was done as a part
5 of the scaled deployment and used that as the
6 basis for this initial deployment.

7 Q Okay. Now, if I could, I would direct you
8 back to Page 6 of your supplemental rebuttal
9 testimony, beginning on Line 8, where you talk
10 about perhaps the most significant benefit to
11 consumers is the potential economic impact.

12 Now, the economic impact of the
13 benefits is a potential impact; correct?

14 A Correct.

15 Q All right. The actual impact of the deferral
16 of costs to be recovered in the next rate case
17 would be an actual impact once the next rate
18 case comes; correct?

19 A Correct.

20 Q All right.

21 I'm sorry, I made a mistake. I
22 just directed you to Mr. Keen's testimony. I
23 don't believe you actually said --

24 A I was trying to find it.

25 MS. HERRIMAN: I was going to say

1 I don't see where it says the most significant
2 benefit.

3 Q I'm sorry.

4 I believe in your testimony you
5 talk about proposed distribution automation
6 equipment --

7 A Yes.

8 Q -- that will provide customers with a
9 reduction in sustained outages through the
10 ability of self-healing technology.

11 Does that self-healing
12 technology -- Well, first of all, have you
13 monetized the benefits of those reduced
14 outages?

15 A We have looked at using some national data
16 from EPRI and the National Renewable Energy
17 Lab and tried to normalize that for a
18 Duke-based infrastructure to come up with a
19 calculation of the benefits for an avoided
20 outage.

21 Q Is the Company providing a guarantee of those
22 benefits or guaranteeing that all of those
23 benefits will be used to offset any future
24 rate increase?

25 A What we have, basically, said is that we

1 would, as a part -- again, as a part of this
2 initial deployment, that we would quantify, to
3 the best of our ability, the value that's
4 created or the benefits that are provided as a
5 part of avoiding outages, but for us to be
6 able to predict what outages would occur at
7 this time would probably not be prudent.

8 Q Okay. Now, with respect to the self-healing
9 technology, does that require a smart meter on
10 every home?

11 A Not for the self-healing technology.

12 Q Okay. With respect to the automated circuit
13 breakers and reclosers, does that require a
14 smart meter on every home?

15 A No.

16 Q All right. Has the Company proposed or
17 considered a test area where they install
18 self-healing technology and automated circuit
19 breakers and reclosers without installing
20 smart meters to see if there is any difference
21 with respect to reductions in outages?

22 A No, we haven't.

23 If I may expand upon that answer?

24 We do have automated circuit breakers in
25 service today, but as a part of this pilot or

1 the initial deployment, we haven't
2 proposed -- we're proposing to install the
3 automated circuit breakers along with the new
4 meters in the Carmel District.

5 Q Okay, but the Company already has some
6 automated circuit breakers in place?

7 A Yes, we do.

8 Q Thank you, Mr. Denton.

9 MR. POLK: I have no further
10 questions, Your Honor.

11 JUDGE STORMS: Thank you, Mr.
12 Polk.

13 Redirect?

14 MS. HERRIMAN: None, Your Honor.

15 JUDGE STORMS: Okay.

16

17 **QUESTIONS OF MR. DONALD H. DENTON, III,**

18 **BY JUDGE STORMS:**

19 Q Mr. Denton, I just have one question for you,
20 and it has to do with the response to the
21 Docket Entry that was sent out just, I think,
22 last week. It was just to confirm, I believe,
23 Question 6.

24 Do you have that?

25 A I'm looking.

1 Is that the piece that was filed
2 under seal?

3 MS. HERRIMAN: May I approach,
4 Your Honor?

5 JUDGE STORMS: Yes, you may.

6 A Okay.

7 Q Okay. I don't know if you have your response
8 as well to that question.

9 A I do.

10 Q Do you have that?

11 A Yes.

12 Q And I'm just looking at No. 6, your response,
13 and it talks about the Security Plan, and I
14 just wanted to confirm. I see in your
15 paragraph you say that the policies with
16 respect to security initiatives, key security
17 initiatives, apply to all of Duke Energy
18 employees, contractors, third-parties.

19 Do you know, is there a specific
20 contract provision with respect to Verizon
21 that requires this same type of
22 confidentiality process be followed by that
23 company?

24 A We do have a confidentiality agreement as a
25 part of our master contract with Verizon. I

1 don't know if it specifically calls out these
2 particular policies, but I do know that the
3 confidentiality provision is included as a
4 part of the master contract.

5 Q But your response here is really just kind of
6 a blanket response that any of these
7 contractors would be covered by these types of
8 policies? Would that be the indication?

9 A Right. I'm not sure that -- We do have as
10 part of our IT Security Plan -- I don't know
11 if it calls out specifically our Personal
12 Information Privacy Policy as it -- as an
13 attachment to the contract, per se --

14 Q Okay.

15 A -- but I do know that there are -- there is
16 confidentiality provisions as it relates to
17 information as a part of the contract.

18 Q If the Commission has questions on that, is
19 that something that you would be able to
20 provide after the hearing --

21 A Absolutely.

22 Q -- as a late-filed exhibit?

23 A Yes, Your Honor.

24 Q I think that might be helpful --

25 A Okay.

1 Q -- just to confirm one way or the other --

2 A We can do that.

3 Q -- if that could be submitted as a late-filed
4 exhibit.

5 JUDGE STORMS: Mr. Denton, thank
6 you very much for your testimony. You may be
7 excused.

8 WITNESS DENTON: Thank you.

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14 (WITNESS DONALD H. DENTON, III EXCUSED ON
15 DIRECT AND REBUTTAL)

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1 JUDGE STORMS: Petitioner, you
2 may call your next witness.

3 MS. HERRIMAN: Thank you, Your
4 Honor. Petitioner calls Mike Rowand.

5 JUDGE STORMS: Please raise your
6 right hand to be sworn.

7

8 (OATH DULY ADMINISTERED TO WITNESS)

9

10 **MICHAEL D. ROWAND**, a witness appearing on behalf
11 of the Petitioner, both on
12 Direct and Rebuttal, having
13 been first duly sworn,
14 testified as follows:

15

16 **DIRECT EXAMINATION,**

17 **QUESTIONS BY MS. HERRIMAN:**

18 Q Good morning, Mr. Rowand.

19 A Good morning.

20 Q Can you, please, state and spell your last
21 name for the record?

22 A Michael D. Rowand, R-o-w-a-n-d.

23 Q Thank you.

24 Can you, please, state your
25 employer and your current employment position?

1 A Duke Energy; Director, Advanced Customer
2 Technology.

3 Q You have before you a document that's been
4 marked for identification purposes as
5 Petitioner's Exhibit EE and Petitioner's
6 Exhibit JJ.

7 Are those copies of your prefiled
8 direct and -- supplemental direct and
9 supplemental rebuttal testimony in this
10 proceeding?

11 A Yes, they are.

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

14 A No, I do not.

15 Q If I were to ask you the same questions today,
16 would your answers be the same?

17 A Yes.

18 Q Do you adopt Petitioner's Exhibits EE and JJ
19 as your sworn testimony in this cause?

20 A Yes.

21 MS. HERRIMAN: Your Honor,
22 Petitioner offers into evidence Petitioner's
23 Exhibits EE and JJ.

24 JUDGE STORMS: Is there any
25 objection?

1 If not, we'll show Petitioner's
2 Exhibits EE and JJ admitted into this cause.
3
4 (PETITIONER'S EXHIBIT NO. EE,
5 BEING THE PREFILED SUPPLEMENTAL
6 TESTIMONY OF MR. MICHAEL D. ROWAND,
7 AND PETITIONER'S EXHIBIT NO. JJ,
8 BEING THE PREFILED SUPPLEMENTAL
9 REBUTTAL TESTIMONY OF MR. MICHAEL
10 D. ROWAND, ADMITTED INTO EVIDENCE.)
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1 MS. HERRIMAN: Your Honor, Mr.
2 Rowand is available for cross-examination.

3 JUDGE STORMS: Mr. Polk, your
4 witness.

5 MR. POLK: Thank you, Your Honor.

6

7 **CROSS-EXAMINATION OF MR. MICHAEL D. ROWAND,**

8 **QUESTIONS BY MR. POLK:**

9 Q Good morning, Mr. Rowand.

10 A Good morning.

11 Q On Page 3 of your supplemental rebuttal
12 testimony, you accuse Mr. Smith of ignoring
13 that the Company is proposing to learn about
14 how energy storage can make distributed
15 generation a more valuable resource to
16 customers with respect to the renewable energy
17 component of the pilot.

18 Is the main purpose of that to
19 gain information about energy storage and
20 distributed generation?

21 A The purpose of the -- referring to the solar
22 PV and energy storage components of the pilot?

23 Q That's correct.

24 A Okay. The intent there is to understand the
25 dynamics of those technologies with the Smart

1 Grid initial deployment.

2 Q Okay. Is it critical that the PV and the
3 energy storage components of the pilot be
4 combined with the plug-in hybrid electric
5 vehicle or PHEV component?

6 A I think it provides many opportunities, and
7 there is benefits of combining those.

8 The energy storage is an
9 opportunity to make renewables more valuable,
10 to increase the penetration of renewables. It
11 also gives us a chance to -- When combined
12 with the plug-in vehicles, which is a load we
13 see coming on our system in the coming months,
14 it gives us an opportunity to understand how
15 we can manage that load in a way to maintain
16 the reliability and manage the peak demands to
17 the grid.

18 Q What is the major obstacle to more distributed
19 generation within the Duke system in Indiana?

20 A Currently, the cost.

21 Q Does energy storage increase or reduce the
22 cost of renewable energy?

23 A Well, energy storage is a cost component in
24 itself. So, when combined, it would increase
25 the cost of renewables, but at the same time,

1 it has the opportunity to increase the value.

2 Also, with energy storage combined
3 with the plug-in vehicles and home energy
4 management, as indicated, it gives the
5 opportunity to share the cost of energy
6 storage across several value propositions
7 which has the potential to minimize its cost
8 as related to renewables.

9 Q So the main value of the energy storage is its
10 ability to help offset the cost of charging a
11 plug-in hybrid electric vehicle?

12 A I wouldn't say the main. It provides --
13 Within the context of this pilot, it provides
14 the opportunity to add value to the renewable
15 to make sure that we capture all the possible
16 renewables. It is an opportunity to manage
17 the charging of the vehicle in a way to
18 mitigate impacts, and also, when integrated
19 with the home energy management system, it is
20 a way of optimizing the entire profile of the
21 home.

22 Q Has the Company proposed energy storage
23 without being combined with a plug-in hybrid
24 electric vehicle?

25 A The filing here includes energy storage as

1 part of these homes with plug-in vehicles and
2 the solar and the home energy control.

3 Q Okay. So, we may not learn any information
4 or, at least, not much useful information
5 about how energy storage operates for a home
6 that doesn't have a plug-in hybrid electric
7 vehicle?

8 A No, I think we'll still learn a lot.

9 The vehicle won't be at home all
10 the time. We will have data of the individual
11 components; so, with that data, we'll be able
12 to do modeling to, you know, remove the
13 vehicle, add the vehicle. So, even though
14 they're combined in one place, which gives us
15 a lot of opportunities, we will be gathering
16 data of each of the individual components.

17 Q Now, you've indicated that the Company's goal
18 is to better ascertain how energy storage can
19 improve the long-term prospects for the
20 penetration and adoption of renewables in
21 Indiana.

22 Would low-interest loans improve
23 the prospect of renewable energy generation in
24 Indiana?

25 A I don't have the expertise to comment on that.

1 Q Has the Company proposed a pilot to see
2 whether low-interest loans would improve the
3 long-term prospects for the penetration and
4 adoption of renewables?

5 A We have not.

6 Q All right. Would increasing the current cap
7 on net metering, say up to 2 megawatts, would
8 that improve the prospects for renewable
9 energy generation in Indiana?

10 A I can't comment on that.

11 Q All right. Has the Company proposed a pilot
12 to do that in Indiana?

13 A No.

14 Q Okay, and I would expect now that you would
15 not be able to comment on whether a feed-in
16 tariff would improve the prospects of
17 renewable energy generation in Indiana;
18 correct?

19 A You'd be correct in that assumption.

20 Q All right, and I'd also be correct that the
21 Company has not proposed that as part of its
22 pilot?

23 A That's correct.

24 Q All right, and moving on to Page 4 of your
25 testimony, around the end of Line 4, you talk

1 about how to make renewable technology such as
2 wind and solar really viable replacements for
3 base load generation in Indiana.

4 Can the use of gas-fired combined
5 cycle units be used to mitigate the
6 intermittency of renewable generation?

7 A Theoretically, it can. It's almost by default
8 in different places as it is now.

9 Q I'm sorry, can you explain that?

10 A I mean, anywhere wind is being used now where
11 there is gas turbines, that's, in essence,
12 what's happening. The intermittency of wind
13 is being captured into this system today.
14 When those penetrations of wind increase,
15 there are issues, and, obviously, the use of
16 gas turbines involves fossil carbon
17 consumption as well.

18 Q Would that carbon consumption be less for
19 natural gas than it would be for base load
20 coal?

21 A That's not within the scope of this testimony.

22 Q Well, you spoke about carbon reduction. I
23 assumed you had an opinion on one fuel source
24 over another in carbon reduction.

25 A No, I was just commenting in regard to can

1 natural gas be used as a -- to mitigate some
2 of the intermittency of wind.

3 So, my comment was that, you know,
4 the practice today, that's the only thing
5 that's really out there to do that or that
6 occurs on the system, and I was just making a
7 comment compared to energy storage. Energy
8 storage gives ways of doing that that are not
9 generation related.

10 Q Do you know if there is an ability to model
11 the day-ahead resources from installed solar
12 photovoltaic panels?

13 A I don't know of a system right now that is in
14 widespread use. I know there are different
15 academic studies and companies pursuing that.

16 Q Can load following solar PV be used to offset
17 the need for peak generation?

18 A In and of itself, it's hard to comment. The
19 intermittency just makes it a tough issue.

20 Q Assuming the Edwardsport plant is completed
21 and fully functioning at some point, is Duke
22 still in need of additional base load
23 generation or will it --

24 MS. HERRIMAN: Objection, Your
25 Honor. This is outside the scope of Mr.

1 Rowand's testimony. There is nothing in his
2 testimony at all that refers to the
3 Edwardsport IGCC.

4 MR. POLK: He refers to the need
5 for base load generation, and the question
6 is -- you know, when a witness raises the
7 issue of whether renewables will match the
8 generation that the Company needs, the
9 question arises what type of generation does
10 the Company need.

11 I carefully -- well, at least, I
12 hope it was careful -- phrased the question to
13 not put -- cast any doubts or aspersions on
14 the Edwardsport plant, but assumed that it
15 would be installed as base load generation,
16 would function as base load generation, and --
17 because that's in the Company's IRP -- what
18 type of generation will the Company need in
19 the future.

20 MS. HERRIMAN: Mr. Rowand's
21 testimony is discussing the ability of energy
22 storage paired with wind and solar to become a
23 viable replacement for base load generation.
24 It does not talk about the Company's need for
25 base load generation or the Company's IRP.

1 JUDGE STORMS: I'll sustain the
2 objection.

3 You may proceed, Mr. Polk.

4 Q Mr. Rowand, has the Company performed a total
5 resource cost test on the energy storage
6 pilot?

7 A No.

8 Q Has it performed a ratepayer impact test on
9 the energy storage pilot?

10 A No.

11 Q Will the energy storage pilot alone have a
12 significant impact on system reliability or on
13 costs for those customers who do not have a
14 plug-in hybrid electric vehicle and energy
15 storage device?

16 A The pilot is a small-scale pilot so --

17 Q And if you could just refresh my memory, how
18 many participating customers are in that
19 pilot?

20 A Our expectation is to have five homes with the
21 energy storage component.

22 Q And how will those customers be chosen?

23 A That is still to be determined.

24 Q Do you have any understanding of whether five
25 customers provides a statistically valid

1 sample?

2 A In terms of statistically valid, I'm not a
3 statistician; so, I'm not certain. I believe
4 it does provide enough variety that we can get
5 several -- get diversity in installations.

6 Q But do you believe those five customers will
7 be fully representative of Duke's service
8 territory and provide you the data that the
9 Company would need to know in order to roll
10 out that technology system-wide?

11 A I believe it will provide enough value for us
12 to understand -- to have a better
13 understanding of the value of energy storage
14 and the long-term potential of using it as a
15 distributed resource.

16 Q So the primary value of this project is not in
17 quantifiable, economic benefits but in the
18 knowledge that the Company will gain from
19 doing research and development?

20 A Well, I would say the -- We will be
21 understanding the actual impact. What can
22 we -- especially when combined with the solar
23 photovoltaic and the plug-in vehicle load, can
24 we manage that load in a way to mitigate any
25 reliability and peak impact concerns and also

1 in a way that meets the customer needs.

2 Q And the value of that information would have
3 less importance or significance if plug-in
4 hybrid electric vehicles are not adopted
5 system-wide within the Duke service territory?

6 A It would have value with and without plug-in
7 vehicles. Plug-in vehicles, because of them
8 coming to the market, provide a unique
9 opportunity, but when we look at overall
10 energy efficiency programs, the time-of-use
11 rates that are in the pilot, home energy
12 management, energy storage meets -- has an
13 opportunity to add value to a number of
14 components related to smart grid applications.

15 Q Has the Company run any analysis modeling
16 whether energy storage is a least-cost
17 alternative compared to using other
18 supply-side resources?

19 A We have modeled energy storage as a way of
20 meeting load profile needs; so, we have done
21 some modeling.

22 Q Okay, but none at this point that shows that
23 it's the least-cost alternative for providing
24 utility service?

25 A Right. No model today -- Well, what we

1 have -- As part of this pilot, what we're
2 gathering, as I mentioned earlier, is that
3 there are shared value propositions to energy
4 storage, and we're looking to this pilot to
5 understand the different value propositions so
6 that we can do -- understand where energy
7 storage is going and what the opportunities
8 are for using it in the future.

9 Q Thank you, Mr. Rowand.

10 MR. POLK: I have no further
11 questions, Your Honor.

12 JUDGE STORMS: Thank you, Mr.
13 Polk.

14 Redirect for this witness?

15 MS. HERRIMAN: No, Your Honor.

16 JUDGE STORMS: Mr. Rowand, thank
17 you very much for your testimony. You're
18 excused.

19 WITNESS ROWAND: Thank you.

20

21

22 **(WITNESS MICHAEL D. ROWAND EXCUSED ON DIRECT**
23 **AND REBUTTAL)**

24

25

1 JUDGE STORMS: Petitioner, you may
2 call your next witness.

3 MS. HERRIMAN: Thank you, Your
4 Honor. Petitioner calls Jeff Bailey.

5 JUDGE STORMS: Mr. Bailey, please
6 raise your right hand to be sworn.

7

8 (OATH DULY ADMINISTERED TO WITNESS)

9

10 **JEFFREY R. BAILEY**, a witness appearing on behalf
11 of the Petitioner, on Direct,
12 having been first duly sworn,
13 testified as follows:

14

15 **DIRECT EXAMINATION,**

16 **QUESTIONS BY MS. HERRIMAN:**

17 Q Good morning, Mr. Bailey.

18 A Good morning.

19 Q Can you, please, state your name for the
20 record?

21 A My name is Jeffrey R. Bailey.

22 Q Can you state your employer and your position
23 with that employer?

24 A My employer is Duke Energy Business Services,
25 LLC, and I'm employed as its Director, Pricing

1 and Analysis.

2 Q Do you have a document that's been marked for
3 identification purposes as Petitioner's
4 Exhibit GG, Petitioner's Revised Exhibit GG-1
5 and Revised Exhibit GG-2?

6 A Yes, I do.

7 Q Is that a copy of your prefiled supplemental
8 testimony in this cause?

9 A Yes, it is.

10 Q Are there any changes or corrections to your
11 testimony?

12 A No, there are not.

13 Q If I were to ask you the same questions today,
14 would your answers be the same?

15 A Yes, they would.

16 Q Do you adopt Petitioner's Exhibit GG and the
17 attached revised exhibits as your sworn
18 testimony in this cause?

19 A I do.

20 MS. HERRIMAN: Your Honor,
21 Petitioner offers into evidence Petitioner's
22 Exhibit GG, Revised Exhibit GG-1 and Revised
23 Exhibit GG-2.

24 JUDGE STORMS: Okay. If there is
25 no objection, we'll show Petitioner's Exhibit

1 GG and Revised Exhibits GG-1 and GG-2 admitted
2 into this cause.

3 MS. HERRIMAN: Thank you.

4
5 (PETITIONER'S EXHIBIT NO. GG,
6 BEING THE PREFILED SUPPLEMENTAL
7 TESTIMONY OF MR. JEFFREY R.
8 BAILEY, WITH EXHIBIT NOS. GG-1
9 REVISED AND GG-2 REVISED ATTACHED
10 THERETO, ADMITTED INTO EVIDENCE.)
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1 MS. HERRIMAN: Your Honor, Mr.
2 Bailey is available for cross-examination.

3 JUDGE STORMS: Thank you.
4 Mr. Polk, your witness.

5 MR. POLK: Thank you, Your Honor.
6 I don't have any questions for this witness.

7 JUDGE STORMS: Oh, you do not?
8 Is there any additional questions? I don't
9 believe any other parties -- The Commission
10 may have a question for you, Mr. Bailey.

11 WITNESS BAILEY: All right.

12

13 **QUESTIONS OF MR. JEFFREY R. BAILEY,**

14 **BY JUDGE STORMS:**

15 Q I don't know if you have your response that
16 you submitted in response to the Commission's
17 Docket Entry. I have a question on that
18 response.

19 A Okay.

20 Q Specifically, and this may be a vision issue
21 on my part, but I'm seeing in your response
22 that the revised Standard Contract Rider is
23 marked as No. 6, and then I look at the actual
24 revised Standard Contract Rider, and it looks
25 like it's an 8, but I'm not quite sure; our

1 copies are not the best, but I just want to
2 confirm the numbering, at least, initially.

3 Do you see where I am?

4 A I'm not -- I'm just about there.

5 Q It's way in the back.

6 A We do have it listed as Standard Contract
7 Rider 8 in the tariff.

8 Q And that is correct?

9 A Yes.

10 Q Okay.

11 The other question I have, and
12 this goes to -- and stay on that tariff page,
13 and I'll -- Let me ask you this question: It
14 talks about each kilowatt hour of curtailed
15 energy, and then I see in your testimony on
16 Page 9, around Line 10, 11, right in there, it
17 talks about ". . .receive a rebate payment for
18 any load reductions below an estimated
19 baseline load level designed to reflect their
20 typical usage pattern."

21 How is that baseline to be
22 determined? Is that something that you know
23 at this point or can you provide additional
24 information on that?

25 A We're looking at two primary methods right now

1 to perform that calculation. One of them is
2 we will look at the three highest temperature
3 days in the last 30 days that preceded the
4 event and use that as the baseline, and when
5 the event is called, we would look at the
6 reduction relative to those numbers. The
7 other is we would look at the five days --
8 five weekdays that preceded the event.

9 So, we're trying to evaluate those
10 and come to some kind of conclusion as to
11 which one we would ultimately use, but those
12 are the two that we've narrowed it down to.

13 Q And how will that be conveyed if you develop a
14 process that's to be utilized on a consistent
15 basis? Is that something that will be
16 included in a tariff or is that just something
17 that you will do on your own or how will that
18 work?

19 A I think ultimately once we settle on the
20 methodology, we'll place that in the tariff,
21 and that will be available for customer
22 review.

23 Q Okay. Now, if you do have a -- Okay.

24 If you do call on a customer to
25 reduce, is that something they'll have the

1 opportunity to react to prior to the call or
2 how is that going to work?

3 A Well, they would be notified prior to the
4 event.

5 Q Okay. Will they, then, be in a position to
6 confirm or --

7 A No. It would not be that complicated for a
8 residential customer. It is completely at
9 their option. They can reduce or not. There
10 is no penalty if they don't. It is strictly
11 up to them.

12 JUDGE STORMS: Mr. Bailey, thank
13 you very much for your testimony. You're
14 excused.

15 WITNESS BAILEY: You're welcome.

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19 **(WITNESS JEFFREY R. BAILEY EXCUSED ON DIRECT)**

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1 JUDGE STORMS: Anything further
2 from the Petitioner?

3 MS. HERRIMAN: Petitioner rests,
4 Your Honor, unless there are questions that
5 Mr. Keen necessarily has to defer to
6 Mr. Denton.

7 JUDGE STORMS: Okay, and
8 Mr. Denton is still here and available, and
9 even though I have excused him, I want to
10 caution him that I may call him back.

11 MS. HERRIMAN: Yes, Your Honor.

12 JUDGE STORMS: Okay. Let's go
13 ahead, and I believe we can just introduce the
14 remainder of the testimony in this cause for
15 which cross-examination has been waived for
16 witnesses.

17 Mr. Aikman?

18 MR. AIKMAN: Yes. On behalf of
19 the Indiana Telecommunications Association, I
20 offer into evidence what's been marked as the
21 ITA's Exhibit AIM-1, which is the prefiled
22 direct testimony of Alan I. Matsumoto filed in
23 this cause on February 27, 2009. Essentially,
24 we're reoffering this testimony which was
25 admitted into the record in the hearing held

1 in this proceeding last year.

2 JUDGE STORMS: That would already
3 be in the record then.

4 MR. AIKMAN: And then secondly,
5 we'll offer ITA's Exhibit AIM-2, which is the
6 supplemental prefiled direct testimony of Alan
7 I. Matsumoto filed in this proceeding on
8 April 15, 2010, and lastly, ITA's Exhibit
9 AIM-3, which is the supplemental rebuttal
10 testimony of Alan I. Matsumoto filed in this
11 cause on June 28, 2010.

12 JUDGE STORMS: Okay. If there is
13 no objection, we'll show each of these
14 exhibits admitted into this cause.

15 MR. AIKMAN: Thank you, Your
16 Honor.

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1 (INTERVENOR'S - ITA EXHIBIT NO.
2 AIM-1, BEING THE PREFILED DIRECT
3 TESTIMONY OF MR. ALAN I. MATSUMOTO;
4 INTERVENOR'S - ITA EXHIBIT NO.
5 AIM-2, BEING THE SUPPLEMENTAL
6 PREFILED DIRECT TESTIMONY OF MR.
7 ALAN I. MATSUMOTO, AND
8 INTERVENOR'S - ITA EXHIBIT NO.
9 AIM-3, BEING THE PREFILED
10 SUPPLEMENTAL REBUTTAL TESTIMONY OF
11 MR. ALAN I. MATSUMOTO, ADMITTED
12 INTO EVIDENCE.)

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1 MR. AIKMAN: The ITA has no
2 further evidence.

3 JUDGE STORMS: Okay.
4 Mr. Polk?

5 MR. POLK: Thank you, Your Honor.
6 At this time, I'd like to introduce into the
7 record the supplemental testimony of Grant
8 Smith, Executive Director of Citizens Action
9 Coalition, marked for identification as CAC
10 Exhibit AA.

11 I just now noticed there are two
12 typographical errors on this, and I don't know
13 whether -- His name is Grant S. Smith, not S.
14 Grant Smith. So, that's on the cover page and
15 at the top of Page 1. I don't know how you'd
16 like me to address those corrections.

17 JUDGE STORMS: Well, I think just
18 reflecting it in the record will be sufficient
19 for the purpose of that correction.

20 If there is no objection, we'll
21 show CAC Exhibit AA admitted into this cause.

22 MR. POLK: Thank you.

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1 (INTERVENOR'S - CAC EXHIBIT NO. AA,
2 BEING THE PREFILED SUPPLEMENTAL
3 TESTIMONY OF MR. GRANT S. SMITH,
4 ADMITTED INTO EVIDENCE.)
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1 MR. POLK: CAC rests.

2 JUDGE STORMS: Mr. Tolliver?

3 MR. TOLLIVER: Thank you, Your
4 Honor. At this time, the Public would call
5 Ronald L. Keen to the Stand.

6 JUDGE STORMS: Mr. Keen, please
7 stand and raise your right hand to be sworn.

8

9 (OATH DULY ADMINISTERED TO WITNESS)

10

11 **RONALD L. KEEN**, a witness appearing on behalf of
12 the Public, having been first
13 duly sworn, testified as follows:

14

15 **DIRECT EXAMINATION,**

16 **QUESTIONS BY MR. TOLLIVER:**

17 Q Good morning, Mr. Keen.

18 A Good morning, sir.

19 Q What is your name?

20 A Ronald L. Keen.

21 Q Would you, please, spell your last name for
22 the record?

23 A K-e-e-n.

24 Q By whom are you employed?

25 A I'm employed by the Indiana Office of Utility

1 Consumer Counselor.

2 Q Do you have before you what's been previously
3 marked as Public's Exhibit No. RLK-S2?

4 A Yes, I do.

5 Q Do you recognize this document?

6 A Yes, I do.

7 Q Is this document a true and accurate copy of
8 your supplemental direct testimony in this
9 cause?

10 A I believe it is.

11 Yes.

12 Q Do you have any corrections or additions that
13 you wish to make to this testimony at this
14 time?

15 A No, I do not.

16 Q Do you adopt this testimony as your sworn
17 testimony in this cause?

18 A Yes, I do.

19 MR. TOLLIVER: Your Honor, at this
20 time, the Public would move to admit Public's
21 Exhibit No. RLK-S2, the supplemental direct
22 testimony of Ronald L. Keen.

23 JUDGE STORMS: Okay. If there is
24 no objection, we'll show Public's RLK-S2
25 admitted into this cause.

1 MR. TOLLIVER: Thank you, Your
2 Honor.
3
4 (PUBLIC'S EXHIBIT NO. RLK-S2,
5 BEING THE PREFILED SUPPLEMENTAL
6 DIRECT TESTIMONY OF MR. RONALD L.
7 KEEN, ADMITTED INTO EVIDENCE.)
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1 MR. TOLLIVER: At this time,
2 Mr. Keen is available for cross-examination.

3 JUDGE STORMS: Thank you.
4 Mr. Polk?

5 MR. POLK: Thank you, Your Honor.

6

7 **CROSS-EXAMINATION OF MR. RONALD L. KEEN,**

8 **QUESTIONS BY MR. POLK:**

9 Q Good morning, Mr. Keen.

10 A Good morning, sir.

11 Q On -- Well, how many meters -- advanced meters
12 is Duke proposing as part of this proceeding?

13 A I believe as part of this proceeding Duke is
14 proposing to deploy approximately 40,000
15 meters.

16 Q Okay. Does NIPSCO currently have a smart grid
17 or smart metering program?

18 A They have a pilot program.

19 Q Okay, and how many smart meters are they
20 proposing to install, do you know?

21 A I'm sorry?

22 Q Do you know how many smart meters they're
23 proposing?

24 A I don't have the exact number right here with
25 me.

1 Q Okay. Do you have a ballpark estimate?

2 A No.

3 Q Okay. Do you know how many smart meters have

4 been proposed by Indianapolis Power & Light?

5 A I don't have that number with me right now.

6 Q Okay. How about I&M, do you recall roughly

7 how many meters they've proposed?

8 A Again, I don't have those numbers with me

9 right now.

10 Q Has Vectren proposed a smart metering program?

11 A Vectren originally proposed a smart grid

12 deployment in an IURC docket but has withdrawn

13 that docket as of -- as of awhile back.

14 Q Okay. Now, you've made it clear that you

15 don't have any specific numbers in front of

16 you with how many meters they've used, and I

17 understand that.

18 Do you have an idea of whether

19 those other companies have been proposing a

20 greater number of meters or a lesser number of

21 meters than what Duke is proposing?

22 A I haven't heard anything official from any of

23 those companies.

24 Q Okay. Has the OUCC performed -- Well, let me

25 step back.

1 On Page 4 of your testimony, at
2 Line 8, you describe the pilot being
3 structured to allow Duke to collect valuable
4 data which could be used -- could be used to
5 facilitate an effective and efficient rollout
6 of Smart Grid technology.

7 Has the OUCC performed an analysis
8 or reviewed an analysis that determines what
9 the concrete dollar savings will be generated
10 by the pilot?

11 A I'm sorry, Mr. Polk, what line -- where were
12 you referring to?

13 Q I'm looking at Page 4 of your supplemental
14 direct testimony --

15 A Okay.

16 Q -- Lines 8 through 10, 8 through 11 --

17 A Okay.

18 Q -- where you talk about this program being
19 used to collect valuable data that could be
20 used to --

21 A I don't see that, Mr. Polk.

22 JUDGE STORMS: I think you might
23 be in the wrong spot. I'm not seeing it.

24 MR. POLK: Am I in the wrong spot?

25 JUDGE STORMS: Yes. That's the

1 question that, I think, I was going to ask you
2 anyway. I'm looking at Line 8, and it talks
3 about applauding Duke Energy Indiana for
4 taking the unusual and forward-thinking step
5 of integrating --

6 MR. POLK: I'm sorry, I was
7 looking at the wrong page count number. It is
8 Page 3. I apologize for that.

9 JUDGE STORMS: Page 3? Okay;
10 thank you.

11 A Okay.

12 Q All right.

13 A Your question, again, please, sir?

14 Q That is it an accurate statement that the
15 program has been designed to collect valuable
16 data but not in and of itself to generate
17 economic benefits?

18 A A pilot program by its very nature is designed
19 to test and evaluate systems and to gather
20 data to allow an agency, a company or an
21 entity to go out and then take that data and
22 analyze whether they want to fully deploy
23 something or whether they want to expand or do
24 anything else with it from both an
25 operational, a maintenance and a cost

1 perspective.

2 The whole concept behind the pilot
3 is to gather the data first. To be able to
4 try to do an analysis without having any data,
5 basically, renders your analysis somewhat of a
6 gamble or a guess. You do the pilot to get
7 the data so you have the hard information to
8 make those analyses and those determinations.

9 Q Is it the policy of the Office of Utility
10 Consumer Counselor to support pilots for
11 gathering -- support ratepayer recovery of
12 pilots or research and development without
13 knowing whether the technology will be
14 implemented and utilized in the future?

15 A Can you restate that question one more time?

16 Q Perhaps I should rephrase it.

17 Duke originally requested funding
18 for an engineering study on Edwardsport. Did
19 your agency recommend 100 percent recovery or
20 something less than 100 percent recovery at
21 the time?

22 MR. TOLLIVER: Your Honor, may I
23 ask a preliminary question for purposes of an
24 objection?

25 JUDGE STORMS: Yes, you may.

1 **PRELIMINARY QUESTIONS OF MR. RONALD L. KEEN,**

2 **BY MR. TOLLIVER:**

3 Q Mr. Keen, are you familiar with the
4 Edwardsport project that Mr. Polk is referring
5 to?

6 A No, sir.

7 Q Did you work on that case?

8 A No, sir.

9 Q Have you been assigned to that case?

10 A No, sir.

11 MR. TOLLIVER: Your Honor, we're
12 going to object to this question to the extent
13 that it is outside the scope of Mr. Keen's
14 testimony.

15 MR. POLK: I'll withdraw the
16 question, Your Honor.

17 JUDGE STORMS: Okay; thank you.

18 MR. TOLLIVER: Thank you.

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1 **CROSS-EXAMINATION OF MR. RONALD L. KEEN,**

2 **(Continuing)**

3 **QUESTIONS BY MR. POLK: (Continuing)**

4 Q Mr. Keen, are you aware of any agency policy
5 or directive with respect to when a utility
6 may collect research and development costs
7 from ratepayers?

8 A I think that type of policy and determination
9 is handled on a case by case basis depending
10 on the merits of each case.

11 Q Has your agency performed any analysis to
12 determine the economic impact of this pilot on
13 ratepayers?

14 A Again, I go back to my previous thing on the
15 whole purpose of a pilot, to assess that and
16 to look at that. You can look at other pilots
17 that are done around the country, but
18 comparing a pilot done in California with the
19 economic circumstances in California may or
20 may not be applicable to Indiana. You do the
21 pilot to assess and to gather that data to be
22 able to go out and make those determinations.

23 Q Okay. With respect to recovering the costs
24 from ratepayers, not whether to perform the
25 pilot or not, should ratepayers pay for a

1 research and development project without some
2 assurance that there are concrete benefits
3 that will be resulting from that project?

4 A I'm not sure I've ever heard this called a
5 research and development project. I've always
6 heard this referred to as the initial
7 deployment, and it is a pilot program to get
8 the -- gather the data and the facts before
9 Duke is willing to make a determination as to
10 the rest of the deployment, but I've always
11 heard Duke refer to it as an initial
12 deployment.

13 Q Well --

14 A I'm referring -- In my testimony, I refer to
15 it as a pilot program.

16 Q Well, has Duke committed to a full and
17 complete rollout of all the technology that
18 they plan to look at in this project?

19 A I believe -- I can't speak to that. You would
20 have to call Mr. Denton to make that
21 determination. I can't speak on behalf of
22 Duke Energy.

23 Q Okay. Well, are you aware of any statements
24 or any commitments that Duke has made to your
25 agency that they will, in fact, deploy this

1 technology system-wide?

2 A Again, I can't speak on any official
3 statements because, again, that would be a
4 determination Duke would have to make on this
5 particular project.

6 Q Okay. Well, would you be able to speak to any
7 statements that Duke has made to your agency
8 or to you about the project?

9 A I don't think it would be appropriate to speak
10 on unofficial or conversations that our agency
11 has had with Duke.

12 Q Do you believe the Commission should care
13 whether this is a pilot, a one-off R&D
14 proposal or a first step in the
15 deployment -- in the full deployment of the
16 technology?

17 A I think -- My personal opinion is that the
18 Commission could view this as a unique
19 opportunity.

20 Understand this: Nowhere in the
21 U.S. am I aware of, and certainly Mr. Denton
22 may be able to enlighten us even more, nowhere
23 am I aware of, anywhere in all the smart grid
24 projects I've seen, where there has been a
25 proposal to deploy all aspects of this thing

1 that we've referred to for the past three to
2 five years as Smart Grid. The meters, the
3 self-healing technology, the distribution
4 automation, the home area network, the
5 technology beyond the meter with the energy
6 management systems, the integrated renewable
7 energy systems with the battery storage and
8 other energy storage combined with PHEV
9 technology, nowhere in the country has that
10 ever been attempted.

11 It's been attempted in segments.
12 You have PHEV here. You have meters here.
13 You have some distribution automation here.
14 All of those have been little pieces of this
15 thing they call the big -- the big Smart Grid.

16 Duke Energy, in my opinion, and
17 from the discussions I've had with them, is
18 taking the unique step of, rather than going
19 back and repeating what's already been done,
20 of taking that information and putting it
21 together and doing this in a system where we
22 cannot only see and gather data from the
23 individual pieces, but we can gather data from
24 the system as well. That's never been done,
25 to my knowledge.

1 So, yes, there is value for the
2 Commission, for the consumer and for the State
3 as a whole to be able to see how this whole
4 system is going to work.

5 Q And what is the monetary value of that?

6 A I -- Again, you can't determine a monetary
7 value until you have the data.

8 As I said before, it's never been
9 done. The pieces individually work. We can
10 cite project after project where each of these
11 pieces works, but you can't extrapolate and
12 say just because the PHEV over here works in
13 California that it's going to work the same in
14 Indiana. You can't say that the Boulder meter
15 project because it works here, and this is the
16 data they got, that that data applies to
17 Indiana.

18 Q Is it possible that the data could show that
19 the project doesn't work?

20 A This project?

21 Q Yes.

22 A If I believed that this project wouldn't work,
23 if I believed in sitting down with the
24 representatives of Duke and all the folks
25 they've offered to our agency to discuss this

1 with, that this project would not work, I
2 would adamantly oppose it.

3 Q Is the plug-in hybrid electric vehicle
4 component necessary to understand the benefits
5 of a self-healing distribution network?

6 A Again, you can take the little piece here and
7 the little piece here and say this isn't
8 applicable to this.

9 You know, do you need meters to
10 test self-healing technology? Not
11 necessarily. However, the meters themselves
12 give you an incredible amount of data on what
13 the system is doing. The self-healing
14 technology as it reacts feeds information.
15 You combine the information you get from the
16 meters combined with the information you get
17 from the other aspects of it, and you get a
18 system-wide approach.

19 Does a PHEV system and
20 self-healing technology combine? Okay, I can
21 take it to the abstract and say yes, if I have
22 a PHEV that's charging, and I have an event
23 that happens where the circuits are hit, and
24 the self-healing technology has to interact,
25 I'm going to get readings off of the PHEV; I'm

1 going to get readings off of the meter; I'm
2 going to get readings off of the sensor
3 systems that's going to tell me what exactly
4 happened when that event hit and how it
5 affects both the meter and the PHEV with its
6 charging system. Does it -- Is there a surge
7 that affects the PHEV? Does the PHEV even
8 acknowledge the loss in time? Do the
9 batteries kick over? Is there enough of a
10 delay in that healing that the battery system
11 kicks in? Is there any damage there?

12 So, yes, there is an
13 interrelationship between all the parts.

14 Q Would the same be true of the benefits of
15 incorporating more PV panels without storage?

16 A You know, there -- there are enough -- PV
17 panels are widely disbursed. You have huge
18 utility-grade projects in California, Arizona,
19 New Mexico.

20 I think the data -- I think there
21 is enough metric data out there; although, I
22 personally haven't taken a look at it because
23 Indiana just doesn't have utility-grade PV or
24 solar systems, but I think there is enough
25 metric data out there that a person could

1 determine the economic value of PV.

2 Again, I go back to this is a
3 unique opportunity where we're combining
4 technologies that have not been combined
5 before. Certainly, you have PV with battery
6 storage out there. Certainly, you have PHEVs
7 with some other systems, but you don't have
8 this holistic entire system approach.

9 Q But it's not holistic without greater
10 deployment of photovoltaic panels and rooftop
11 wind turbines, is it?

12 A I don't know that that's true.

13 Q Okay. It's okay if they're doing that out in
14 California, that provides us enough data, but
15 it doesn't provide us enough data if they're
16 doing PHEV in California?

17 A I'm sorry?

18 Q Well, earlier you indicated that, you know,
19 they were doing a lot of utility-scale solar
20 energy in other states, and that provided
21 enough data to analyze those --

22 A Right.

23 Q -- in other states, but prior to that you said
24 that they're not doing enough in Indiana on
25 PHEV, even though they're doing it in other

1 states, so that we need to do that in Indiana.

2 A No. You missed my point.

3 We've not seen where somebody has
4 taken the time to try to combine this
5 technology with the PHEV. You have PV; okay?
6 I don't know of anywhere where somebody has
7 taken the opportunity to say, let's see what
8 happens if we use PHEV systems combined with
9 PV systems with the inverter and the battery
10 storage integrated into a whole married
11 network and energy management system. That's
12 not been done; okay? It's not been done.

13 It doesn't mean -- And, again, I
14 can't speak for Duke. You would have to ask
15 Mr. Denton. It doesn't mean that at the
16 conclusion of this, they take the data they're
17 looking at, and they evaluate it, and they
18 say, you know, we could do more things with
19 this. We could take this to a new phase and
20 do something else that would give us even more
21 data, but this is a good initial step at doing
22 a combination to get individual piece data and
23 system data.

24 Q And the same would be true of increasing net
25 metering and combine heat and power and a

1 whole number of other projects, wouldn't it?

2 A I'm sorry, I don't -- How are we relating the
3 net metering of that to --

4 Q Increased -- In terms of, you know, a whole
5 system-wide approach --

6 A Okay.

7 Q -- and getting more renewables on the system,
8 which you said is a goal of the OUCC and a
9 goal of Duke, and combining that with --

10 A I said -- I believe I said that we would like
11 to see a more aggressive approach on
12 distributed energy generation resources, and
13 the fact that this is only using solar-based
14 distributed energy generation, and it may
15 yield benefits that may potentially justify
16 more aggressive fielding of utility-grade
17 solar energy. Again, you're data gathering.

18 Q Okay. Turning to Page -- let me make sure I
19 have the right page number here -- 5, Lines 14
20 and following, you list out a number of
21 components to the Duke pilot program.

22 First, there on Line 14, you've
23 got integrated Volt/VAR control testing. Does
24 that require deployment of 40,000 smart
25 meters?

1 A I don't know. You would have to ask the Duke
2 engineers exactly how many meters they would
3 want to adequately test integrated Volt/VAR.
4 Q Okay. Moving down to Line 16, time-of-use
5 rates for residential customers.
6 A Yes.
7 Q How many customers are going to be in that
8 pilot?
9 A I believe it was 100 or 100 -- I believe it
10 was 100.
11 Q Is it necessary to install 40,000 smart meters
12 for those 100 customers to participate in
13 that?
14 A Again -- I'm sorry, you said does it -- Repeat
15 the question.
16 Q Does it require installing 40,000 smart meters
17 for the 100 customers to participate in the
18 time-of-use rate for residential customers?
19 A If you were to take that single piece of the
20 pie out, and the pie -- by the pie, I refer to
21 the entire project -- if that little piece of
22 the pie were removed, if all you wanted to
23 test was that specific thing independent of
24 everything else and not want any integrated
25 data, no.

1 Q Would the same be true for the time-of-use
2 rate for commercial customers?

3 A Again, if you're going to look at it from a
4 very singular approach and not look at the
5 integrated data, then, no, you would not need
6 it if you were going to pull that piece out
7 and only test that with a 100 customer pilot.

8 Q Are you familiar with any residential home
9 area network systems --

10 A Yes, I am.

11 Q Okay. -- that use a Wi-Fi and traditional
12 high-speed Internet connection rather than a
13 smart meter?

14 A Yes, I am.

15 Q All right. As part of a comprehensive
16 integrated smart grid, would that technology
17 be able to play a potential role?

18 A I'm sorry, was that a --

19 Q With a fully-deployed smart grid --

20 A Right.

21 Q -- system, would a home area network utilizing
22 Wi-Fi and broadband Internet technology
23 be -- play a potential role?

24 A Absolutely. Most home area management systems
25 do employ Wi-Fi and broadband systems to

1 operate.

2 Q Okay. Is that what has been proposed by Duke?

3 A Duke has proposed a home area network pilot
4 program.

5 Q And does that require the installation of a
6 smart meter?

7 A Yes, it does.

8 Q Has Duke proposed a -- as part of its Smart
9 Grid pilot looking at whether the same
10 benefits could be achieved without a smart
11 meter and instead using a home area network
12 with Wi-Fi and a traditional Internet
13 broadband connection?

14 A I don't know. I don't know if those
15 discussions were held within Duke. You would
16 have to ask Mr. Denton.

17 Q Have they been proposed as part of the program
18 before the Commission?

19 A They haven't been proposed as part of this
20 pilot as far as I know.

21 Q Okay. With respect to distribution automation
22 and self-healing technology testing, has Duke
23 proposed as part of its pilot a control area
24 where they install all of that technology
25 without smart meters to see if there is any

1 discernible benefit between having smart
2 meters and not having smart meters?

3 A I'm not sure why you're relating the two.
4 Self-healing technology and distribution
5 automation is independent. It is an
6 independent system.

7 The meters provide you -- As I
8 pointed out before, the meters give you data
9 that's going into the house; okay? Any time
10 you have an event, the self-healing technology
11 is going to take care of the event. The
12 meters are going to give you the metrics and
13 the performance data of the system pre- and
14 post-event, and that technology -- You don't
15 get that type of sensor technology -- If all
16 you deploy is self-healing technology, you
17 have no clue what's happening at the house or
18 at the transformer or anywhere else. By
19 having, again, the entire system deployed, you
20 get all of the data, and you can analyze how
21 effective the self-healing technology is.

22 Q Are the transformers dumb transformers or are
23 they smart transformers?

24 A They're smart transformers.

25 Q Okay. So, would it be correct, then, that the

1 Company would actually have data that goes
2 down to the transformer level but might not go
3 down to the individual meter level?

4 A Exactly.

5 Q Okay. Thank you, Mr. Keen.

6 MR. POLK: I have no further
7 questions, Your Honor.

8 JUDGE STORMS: Thank you, Mr.
9 Polk.

10 Redirect for this witness?

11 MR. TOLLIVER: No, Your Honor.

12 JUDGE STORMS: Okay. Mr. Keen,
13 thank you very much for your testimony.
14 You're excused.

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19 **(WITNESS RONALD L. KEEN EXCUSED)**

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1 JUDGE STORMS: Mr. Polk, did
2 Mr. Keen respond in any way that requires
3 Mr. Denton to return?

4 MR. POLK: No, he did not, Your
5 Honor.

6 JUDGE STORMS: Okay. Let's go
7 ahead and go off the record.

8
9 (Off-the-Record Discussion)

10
11 JUDGE STORMS: Let's go ahead and
12 go back on the record.

13 The parties have reached an
14 agreement on the submission of proposed
15 orders.

16 Ms. Herriman, can you enter the
17 parties' agreement into the record, please?

18 MS. HERRIMAN: Yes. Thank you,
19 Your Honor.

20 The parties have agreed to file
21 simultaneous proposed orders on August 19th
22 and exceptions to those proposed orders to be
23 filed September 10th.

24 JUDGE STORMS: Okay. Is there
25 anything else that we need to discuss today?

1 MS. HERRIMAN: No, Your Honor.

2 JUDGE STORMS: If there is nothing
3 further, we are hereby adjourned.

4 Thank you very much.

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25 (HEARING ADJOURNED)

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