

STATE OF INDIANA
INDIANA UTILITY REGULATORY COMMISSION

FILED

July 26, 2017

INDIANA UTILITY
REGULATORY COMMISSION

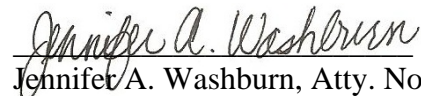
VERIFIED PETITION OF SOUTHERN INDIANA)
GAS & ELECTRIC COMPANY D/B/A VECTREN)
ENERGY DELIVERY OF INDIANA, INC.)
REQUESTING THE INDIANA UTILITY)
REGULATORY COMMISSION TO APPROVE)
CERTAIN DEMAND SIDE MANAGEMENT)
PROGRAMS AND GRANT COMPANY)
AUTHORITY TO RECOVER COSTS, INCLUDING)
PROGRAM COSTS, INCENTIVES AND LOST)
MARGINS, ASSOCIATED WITH THE DEMAND)
SIDE MANAGEMENT PROGRAMS PURSUANT TO)
SENATE ENROLLED ACT 412 AND 170 IAC 4-8-1)
ET. SEQ. VIA THE COMPANY'S DEMAND SIDE)
MANAGEMENT ADJUSTMENT)

CAUSE NO. 44645

SUBMISSION OF CAC'S DIRECT TESTIMONY AND ATTACHMENTS

Citizens Action Coalition of Indiana, Inc. ("CAC"), by counsel, respectfully submits the testimony and attachments of Mr. Karl Rábago in the above referenced Cause to the Indiana Utility Regulatory Commission ("Commission").

Respectfully submitted,



Jennifer A. Washburn, Atty. No. 30462-49
Citizens Action Coalition of Indiana, Inc.
603 East Washington Street, Suite 502
Indianapolis, Indiana 46204
Phone: (317) 735-7764
Fax: (317) 290-3700
jwashburn@citact.org

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing was served by electronic mail or U.S.

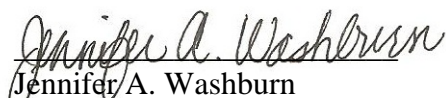
Mail, first class postage prepaid, this 26th day of July, 2017, to the following:

Robert E. Heidorn
P. Jason Stephenson
Michelle Quinn
Vectren Corporation
One Vectren Square
211 N.W. Riverside Drive
Evansville, Indiana 47708
rheidorn@vectren.com
jstephenson@vectren.com
mquinn@vectren.com

Hillary J. Close
Barnes & Thornburg LLP
11 S. Meridian Street
Indianapolis, Indiana 46204
hclose@btlaw.com

Randall Helmen
Jeff Reed
Karol Krohn
Indiana Office of Utility Consumer Counselor
115 W. Washington Street, Suite 1500 South
Indianapolis, Indiana 46204
rhelmen@oucc.IN.gov
jreed@oucc.IN.gov
kkrohn@oucc.IN.gov
infomgt@oucc.IN.gov

Todd Richardson
Joseph Rompala
Lewis & Kappes, PC
One American Square, Suite 2500
Indianapolis, Indiana 46282
trichardson@lewis-kappes.com
jrompala@lewis-kappes.com


Jennifer A. Washburn
Citizens Action Coalition

**STATE OF INDIANA
INDIANA UTILITY REGULATORY COMMISSION**

**VERIFIED PETITION OF SOUTHERN INDIANA)
GAS & ELECTRIC COMPANY D/B/A VECTREN)
ENERGY DELIVERY OF INDIANA, INC.)
REQUESTING THE INDIANA UTILITY)
REGULATORY COMMISSION TO APPROVE)
CERTAIN DEMAND SIDE MANAGEMENT)
PROGRAMS AND GRANT COMPANY)
AUTHORITY TO RECOVER COSTS, INCLUDING)
PROGRAM COSTS, INCENTIVES AND LOST)
MARGINS, ASSOCIATED WITH THE DEMAND)
SIDE MANAGEMENT PROGRAMS PURSUANT TO)
SENATE ENROLLED ACT 412 AND 170 IAC 4-8-1)
ET. SEQ. VIA THE COMPANY'S DEMAND SIDE)
MANAGEMENT ADJUSTMENT)**

CAUSE NO. 44645

**DIRECT TESTIMONY OF
KARL R. RÁBAGO
ON BEHALF OF
CITIZENS ACTION COALITION**

Filed: July 26, 2017

INTRODUCTION AND OVERVIEW

1 **Q. Please state your name, business name and address, and role in this proceeding.**

2 A. My name is Karl R. Rábago. I am the principal of Rábago Energy LLC, a New York
3 limited liability company, located at 62 Prospect Street, White Plains, New York. I
4 appear here in my capacity as an expert witness on behalf of the Citizens Action
5 Coalition of Indiana, Inc. (“CAC”).

6 **Q. Please summarize your experience and expertise in the field of electric utility
7 regulation and the renewable energy field.**

8 A. I have worked for more than twenty-five years in the electricity industry and related
9 fields. I am actively involved in a wide range of electric utility issues across the United
10 States as an expert witness, in my capacity as Executive Director of the Pace Energy and
11 Climate Center, as a party in New York rate cases and in Reforming the Energy Vision
12 proceedings.

13 My previous employment experience includes Commissioner with the Public
14 Utility Commission of Texas, Deputy Assistant Secretary with the U.S. Department of
15 Energy, Vice President with Austin Energy, and Director with AES Corporation, among
16 others.

17 My experience includes making hundreds of decisions on the record in cases
18 involving avoided costs, rates, tariffs, certificates of need, rulemakings, and other
19 proceedings. I have also held executive responsibility for managing public and private
20 budgets ranging to the hundreds of millions of dollars. A detailed resume is attached as
21 Attachment KRR-1.

22 **Q. Have you ever testified before the Indiana Utility Regulatory Commission
23 (“Commission” or “IURC”) or other regulatory agencies?**

24 A. Yes. I filed testimony and testified on behalf of CAC and the Environmental Law and
25 Policy Center in IURC Cause Number 44688 and on behalf of CAC and Valley Watch in

1 IURC Cause Number 44910. In the past four years, I have submitted testimony,
2 comments, or presentations in proceedings in Maryland, New Hampshire, Michigan,
3 Virginia, New York, Hawaii, Iowa, Indiana, Ohio, Rhode Island, Georgia, Minnesota,
4 Missouri, Louisiana, North Carolina, Kentucky, Arizona, Florida, Wisconsin, California,
5 and the District of Columbia. A full listing of my recent previous testimony is attached as
6 Attachment KRR-2.

7 **Q. What is the purpose of your testimony?**

8 A. The purpose of my testimony is to review and respond to the proposals by Southern
9 Indiana Gas and Electric Company, doing business as Vectren Energy Delivery of
10 Indiana, Inc. (“Vectren” or the “Company”), to recover so-called lost revenues associated
11 with its 2016-2017 Energy Efficiency plan pursuant to a remand decision of the Court of
12 Appeals of Indiana in Case Number 93A02-1604-EX-914 on March 7, 2017, relating to
13 the final order of the Indiana Utility Regulatory Commission (“IURC” or “Commission”)
14 in Cause No. 44645 (March 23, 2016), and to offer my recommendations as to how the
15 Commission should proceed in approving a reasonable method for addressing lost
16 revenue recovery resulting from energy efficiency programs.

17 **Q. What position do you take on the ultimate level of lost revenues asserted to result**
18 **from the Company’s 2016-2017 Plan programs?**

19 A. CAC submitted extensive testimony on that and other Plan elements in the case in chief.
20 My testimony goes to the reasonableness of collecting all the approved lost revenues
21 through a lost revenues retail rate adjustment mechanism (“RRAM”) that operates for the
22 full measure life of every energy efficiency measure, or, as now proposed by the
23 Company, that operates for a weighted average portfolio life with a 10% discount. On
24 CAC’s behalf, I assert that the Commission decision to limit the recovery term for any
25 lost revenues through a lost revenues RRAM at four years is reasonable, and that the

1 Company proposal for a longer term is unreasonable. As a result, the Company's
2 proposed 2016-2017 Plan is unreasonable.

3 **Q. What information did you review in preparing this testimony?**

4 A. I reviewed relevant prefiled testimony of Company witnesses, the Indiana Court of
5 Appeals decision, and some documents from the record in the underlying IURC Cause.

6 **Q. What are your recommendations to the Commission?**

7 A. Based on my review of the evidence in this case, I make several recommendations to
8 guide the Commission's response to the direction from the Court of Appeals and to the
9 Company's proposals on remand of this Cause:

- 10 • The Commission should explicitly find that the Company's 2016-2017 Plan is not
11 reasonable due to the unreasonableness of its proposed lost revenue retail rate
12 recovery mechanism.
- 13 • The Commission should reject the Company's proposal for a new mechanism for
14 calculation of its proposed lost revenues RRAM level based on weighted average
15 measure lives and a 10% discount.
- 16 • The Commission should reject as overly broad the position that the role of lost
17 revenue recovery is to put a utility in the same revenue position it would have been in
18 but for the implementation of energy efficiency measures; and instead, the
19 Commission should confirm that RRAM proposals, like rate proposals, must be
20 designed and approved to collect rates that are, in magnitude and impact, just and
21 reasonable.
- 22 • The Commission should specifically find that several factors inform whether a
23 RRAM proposal will be just and reasonable, including those commonly articulated in
24 rate making treatises, and the following:
 - 25 ○ Whether the mechanism will result in excessively large charges imposed

- 1 outside of a full rate case—often known as piece-meal or single-issue rate
2 making.
- 3 ○ Whether the mechanism will require evaluation of data collected over
4 excessively long periods when the charges collected through the mechanism
5 are finally reconciled in the context of a full rate case—an issue of
6 administrative efficiency and fairness to all parties in the rate case.
 - 7 ○ Whether the mechanism will excessively delay the evaluation and recognition
8 of improved system efficiencies and reduced fixed infrastructure costs and
9 other benefits of high-performance energy efficiency programs—an issue of
10 efficiency program evaluation in the context of utility system costs.
 - 11 ○ Whether the mechanism will increase the likelihood that energy efficiency
12 programs are incorrectly perceived by customers as larger and different
13 expenses by being singled out on a customer bill when other utility costs are
14 rolled into base rates—an issue of fair communication of costs and efficient
15 price signals for customers.
 - 16 ○ Whether the mechanism will likely result in constantly changing charges due
17 to measure lives ending, and new savings beginning over longer periods of
18 time—an issue of rate understandability and bill budgeting for customers.
- 19 ● The Commission should find that in light of these factors and its general duty to
20 ensure just and reasonable rates are charged by electric utilities, the Company’s
21 proposal for a lost revenues RRAM and, therefore, its 2016-2017 Plan, are not
22 reasonable and will not result in rates that are just and reasonable.
 - 23 ● The Commission should reaffirm and detail why limiting the duration of the lost
24 revenues RRAM to four years is reasonable, especially in light of the Company’s
25 ongoing right to petition for resetting its base rates, to include cost recovery for costs

1 related to unrecovered lost revenues.

- 2 • The Commission should reject the Company's offered evidence from Company
 3 witness Dr. M. Sami Khawaja in its entirety due to a conflict of interest between the
 4 witness' role as an advocate on behalf of the Company for its proposed lost revenues
 5 RRAM and his role as chief economist for the Cadmus firm, which is charged with
 6 providing independent evaluation of the Company's energy efficiency programs. In
 7 addition, the Commission should order the Company to secure the services of a new,
 8 truly independent evaluator for its energy efficiency programs on a going forward
 9 basis and/or adopt the proposal made by CAC in Cause No. 44841 that the
 10 Commission order the adoption of an Independent Evaluation Monitor ("IEM")
 11 modeled after the IEM approach used in Arkansas.¹

12 SUMMARY OF FINDINGS

13 **Q. What are your findings regarding the Company's lost revenues RRAM proposals?**

14 **A.** My findings are summarized as follows:

- 15 • This proceeding is before the Commission on remand from the Indiana Court of
 16 Appeals to address findings and conclusions based on the record developed prior to
 17 the Commission's issuance of its March 23, 2106 Order in Cause No. 44645.
 18 • The total lost revenues that the Company seeks under its original 2016-2017 Plan
 19 proposal would ultimately amount to nearly two-thirds, or 64% of total Plan costs.
 20 • The Company proposes a new method for calculating the level of the RRAM in its
 21 direct testimony on remand. Due to the nature of this proceeding and its expedited
 22 schedule, the Company proposal has not been subject to a thorough evaluation in a
 23 fully developed evidentiary record.
 24

¹ See Direct Testimony of Shawn M. Kelly on behalf of Citizens Action Coalition of Indiana, at 45-47, filed in IURC Cause No. 44841.

- 1 • The total lost revenues that the Company seeks under its modified 2016-2017 Plan
2 would ultimately amount to nearly 60% of total Plan costs.
- 3 • The total lost revenues that the Company could receive under a lost revenues RRAM
4 limited to four years, as proposed by CAC, would be less than half of total program
5 costs.
- 6 • The Company has retained as an advocate in this proceeding the Chief Economist for
7 the firm that is supposed to provide independent evaluation of the Company's energy
8 efficiency programs. This blatant conflict of interest discredits the witness' testimony
9 in its entirety and provides further support for CAC's proposal for the Commission to
10 adopt an Independent Evaluation Monitor (IEM) model.
- 11 • The Company submitted testimony by witness Albertson that offers unsubstantiated
12 and incorrect assertions about the impact of energy efficiency programs on fixed costs
13 and the likelihood of the Company perversely designing its energy efficiency
14 program portfolio to favor short-lived savings if the collection term for the RRAM is
15 limited to four years or less.

16

17

THE PURPOSE OF LOST REVENUE RECOVERY

18 **Q. What is your understanding of the purpose of lost revenue recovery?**

19 A. Indiana Code § 8-1-8.5-10(e) defines lost revenues as the difference between revenues
20 lost and variable operating and maintenance costs saved. Under 170 IAC § 4-8-6, the
21 Commission may allow the utility to recover lost revenue associated with the
22 implementation of demand side management programs sponsored or instituted by the
23 utility. The approved method for calculation of lost revenues contemplates an assessment
24 of free-rider effects, changes in program participation between base rate changes, and
25 continually revised reevaluation of program savings estimates. Therefore, the purpose of

1 lost revenue recovery is to provide reasonable mitigation of the direct and causally-
2 connected revenue losses resulting from utility sponsored energy efficiency programs and
3 measures.

4 **Q. Company witness Harris states that the purpose of lost revenue recovery is “to**
5 **return the utility to the position it would have been in absent the implementation of**
6 **the [energy efficiency] measures,” to address “the inherent disincentive associated**
7 **with utilities encouraging customers to use less of its product,” and that therefore,**
8 **the Commission “has historically approved [lost revenue recovery] for the life of**
9 **each measure.” (Harris at 5, 2-8) Do you agree?**

10 A. There are several problems with the Company position on the purpose of lost revenues
11 articulated by witness Harris. First, to the extent that witness Harris implies some kind of
12 open-ended award of lost revenues associated with energy efficiency program effects, the
13 statement of purpose goes too far. Rates collected from customers and lost revenues must
14 be reasonable. In addition, Indiana law requires evaluation of variable operating and
15 maintenance expenses, evaluation of free rider effects, changes in program participation,
16 and constant reevaluation of savings estimates.

17 **Q. What other concerns do you have with the Company position as articulated by**
18 **witness Harris?**

19 A. I am disappointed that the Company would assert the antiquated and fundamentally
20 inaccurate position that energy efficiency is about “encouraging customers to use less of
21 its product.” Even the Company itself asserts that it is committed to providing service and
22 not just commodity electricity (or gas) to its customers. Moreover, the assertion ignores
23 the simple fact that energy efficiency facilitates delivery of service at lower cost than
24 conventional commodity generation and delivery systems. The Company’s product
25 should be viewed as electric service at the most economic cost and prices.

1 Finally, the concept of full recovery of reasonable lost revenues for the life of
 2 each energy efficiency measure does not, in itself, establish that any RRAM for lost
 3 revenue recovery must be set to a duration equal to the useful life of the underlying
 4 energy efficiency measure. How reasonable lost revenues are recovered is itself subject to
 5 a reasonableness test within the context of Plan evaluation.

6
 7 **JUST AND REASONABLE RECOVERY OF LOST REVENUES**

8 **Q. What regulatory laws and principles guide the Commission in the evaluation of the**
 9 **Company’s proposals regarding a lost revenues retail rate adjustment mechanism**
 10 **(“RRAM”)?**

11 A. The Company’s proposed rate design falls generally under Indiana Code § 8-1-2-4, which
 12 requires that any “charge made by any public utility for any service rendered or to be
 13 rendered either directly or in connection therewith shall be reasonable and just.” The
 14 specifically relevant statute in this case, I.C. § 8-1-8.5-10 (“Section 10”), was
 15 enacted into law on May 6, 2015, through Senate Enrolled Act 412 (“SEA 412”),
 16 allowing an electricity supplier to file an energy efficiency plan for approval by the
 17 Commission. Section 10(j)(8) lists lost revenues as one element of the utility proposed
 18 plan to be evaluated for overall reasonableness. And under § 10(o), the law provides for
 19 recovery of *reasonable* lost revenues once the overall reasonableness of the proposed
 20 plan has been established. (emphasis added)

21 **Q. Is the reasonableness of rates informed by other authorities in the field of rate**
 22 **making?**

23 A. Yes, in addition to the specific and general statutory guidance from the Indiana
 24 Legislature, sound rate making is guided by well-established principles articulated by
 25 noted experts like James Bonbright.

1 **Q. What are the principles of sound rate making articulated by Bonbright?**

2 A. James Bonbright listed principles for sound rate making in his treatise, “Principles of
3 Public Utility Rates.”² These principles include:³

- 4 • Desirable rate attributes include: simplicity, understandability, public acceptability,
5 and feasibility of application and interpretation.
- 6 • Rates should be effective in yielding total revenue requirements.
- 7 • Rates should provide revenue (and cash flow) stability from year to year.
- 8 • The rates themselves should be stable, with minimal unexpected changes that are
9 seriously adverse to existing customers.
- 10 • Rates must aim for fairness in apportioning cost of service among different
11 consumers.
- 12 • Rates must avoid “undue discrimination.”
- 13 • Rates should advance economic efficiency and send efficient price signals promoting
14 efficient use of energy and competing products and services.

15 **Q. What then must the Commission determine in order to review the proposal for lost
16 revenue recovery through a RRAM?**

17 A. The law and sound regulatory practice requires the Commission to ultimately determine
18 the reasonable amount of lost revenues to be collected, and the reasonableness of the
19 proposed lost revenues RRAM design and operation.

² Principles of Public Utility Rates by James C. Bonbright, p. 291 (available at http://media.terry.uga.edu/documents/exec_ed/bonbright/principles_of_public_utility_rates.pdf).

³ This version is taken from “*Tariff Development II: Rate Design for Electric Utilities*,” Jess Totten, Director, Public Utility Commission of Texas, *Briefing for the NARUC/INE Partnership*. Available at <http://pubs.naruc.org/pub/538EA65C-2354-D714-5107-44736A60B037>. See also Lazar, J. and Gonzalez, W. (2015), “*Smart Rate Design for a Smart Future*.” Montpelier, VT: Regulatory Assistance Project. Available at: <http://www.raponline.org/document/download/id/7680>

1 **Q. Did the Indiana Court of Appeals provide statutory interpretation guidance for**
 2 **determining the reasonableness of lost revenue proposals in utility DSM plans and**
 3 **for this remand case?**

4 A. Yes, the Court of Appeals said that:

5 *Vectren South asserts that Section 10 “calls for a single reasonableness inquiry*
 6 *that considers the ten factors in subsection (j). Recovery of lost revenues is*
 7 *included in this reasonableness inquiry.” Id. Based on the plain language of the*
 8 *statute, we agree. See Ind. Code § 8-1-8.5-10(j)(8) (requiring Commission to*
 9 *consider lost revenues sought to be recovered by electricity supplier in*
 10 *determining overall reasonableness of plan). By capping lost revenue recovery at*
 11 *four years, the Commission implicitly found Vectren South’s lost revenue*
 12 *recovery proposal to be unreasonable...⁴*

13
 14 **THE POSTURE OF THIS CAUSE ON REMAND**

15 **Q. What other guidance did the Court of Appeals provide to the Commission for its**
 16 **remand decision on lost revenues?**

17 A. The Court of Appeals also found that the “financial effect of the four-year cap is
 18 ‘unknown to the Commission’ because no party proposed a four-year cap or ‘presented
 19 data about its economic effect’” and that the Commission must make “specific factual
 20 findings that the cap would allow Vectren South to recover reasonable lost revenues as
 21 provided in Section 10(o)” of I.C. § 8-1-8.5. (Mem. Op. at 17.)

22 **Q. Is CAC proposing a four-year cap on Vectren’s DSM Plan lost revenue recovery?**

23 A. Yes. While the Company can always petition the Commission for a review of its base
 24 rates and revenue requirements, including lost revenues associated with energy efficiency

⁴ Mem. Op. at Page 16 of 18 (internal citations omitted).

1 program results, any lost revenues RRAM must be limited to a maximum duration of four
2 years in order to be reasonable.

3 **Q. Do you have data about and evidence of the “financial effect” that would support (1)**
4 **a rejection of the 2016-2017 DSM Plan as unreasonable, and (2) a four-year cap on**
5 **Vectren’s collection of lost revenues from the 2016-2017 DSM Plan?**

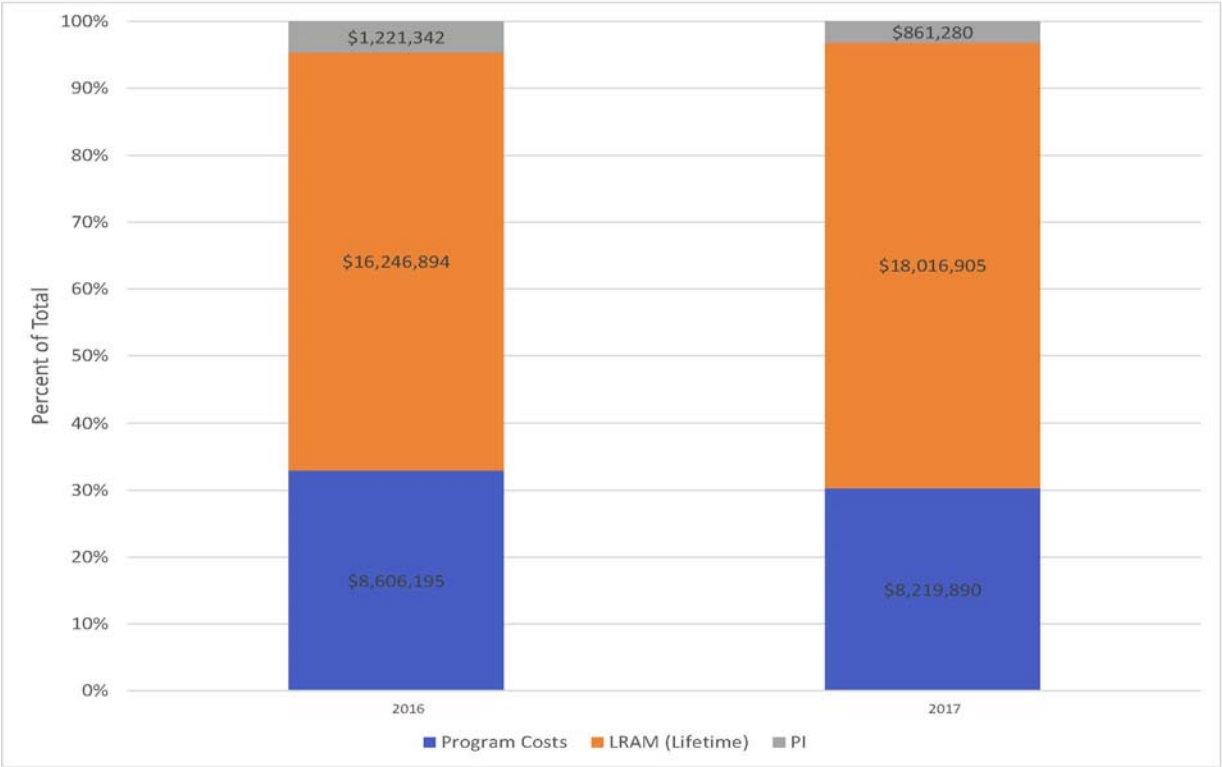
6 A. Yes. The evidence before the Commission establishes the magnitude and timing of rate
7 impacts under an unlimited lost revenues RRAM approach. This evidence demonstrates
8 that the ultimate rate impact of such unlimited RRAM charges would, over time, become
9 unreasonable. As discussed in greater detail below, these are the results of the problems
10 of pancaking of charges and of piece-meal or single-issue rate making. At the levels
11 demonstrated by this data, the benefits of a single-factor tracking and recovery
12 mechanism like a lost revenues RRAM are outweighed by the problems created.

13 **Q. Under Vectren’s original proposal for lifetime lost revenue recovery, what is the**
14 **total amount of lost revenues that Vectren is requesting for the implementation of**
15 **its 2016-2017 Plan?**

16 A. The amount under the Company’s lost revenue recovery original proposal is \$34,263,799,
17 which is 64.4% of the 2016-2017 Plan total, \$53,172,506, that Vectren requested. Figure
18 1 and Table 1, below show program costs, program incentives (“PI”), and lifetime lost
19 revenue recovery requested (“LRAM”).

1

Figure 1. Vectren 2016-2017 DSM Budget with Lifetime Lost Revenue⁵



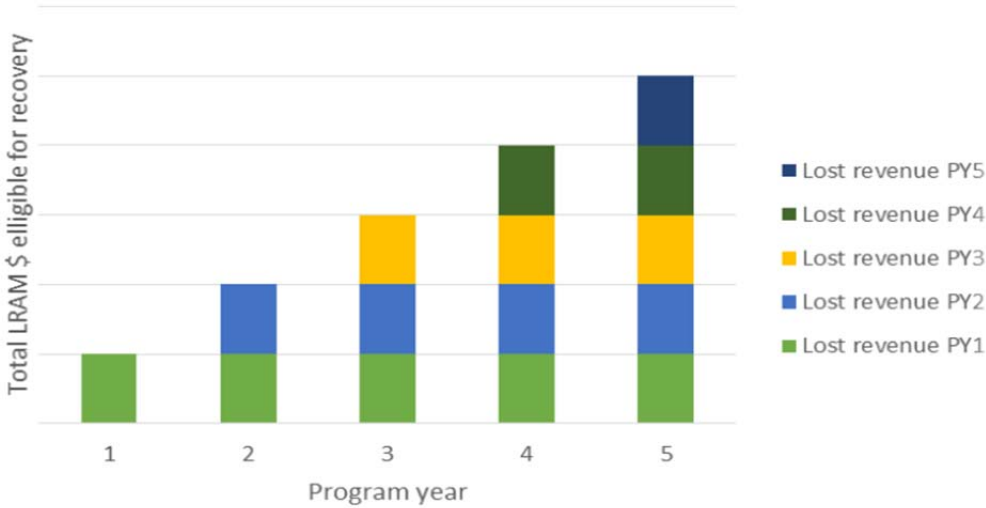
2 **Q. Is it reasonable to allow Vectren to recover lost revenues through a lost revenues**
3 **RRAM for the life of a measure?**

4 A. No. As discussed throughout my testimony, a reasonable lost revenue policy would allow
5 the utility to receive lost revenues for no more than four years or the life of the measure,
6 whichever is shorter. As shown in Figure 1 above and Table 1 below, without a four-year
7 lost revenue limit policy, Vectren ratepayers would pay \$34.3 million in lost revenues for
8 a program that costs \$16.8 million to implement.

9 ACEEE labeled this scenario in which lost revenues for the life of the measure
10 accumulate over a multiple-year period between rate cases as the “Pancake Effect” which
11 is illustrated in Figure 2 below.

⁵ Vectren Response and Attachment to CAC DR 7-2 (Attachment KRR-3).

1 **Figure 2. The Additive Nature of Lost Revenues Results in a Pancake Effect⁶**

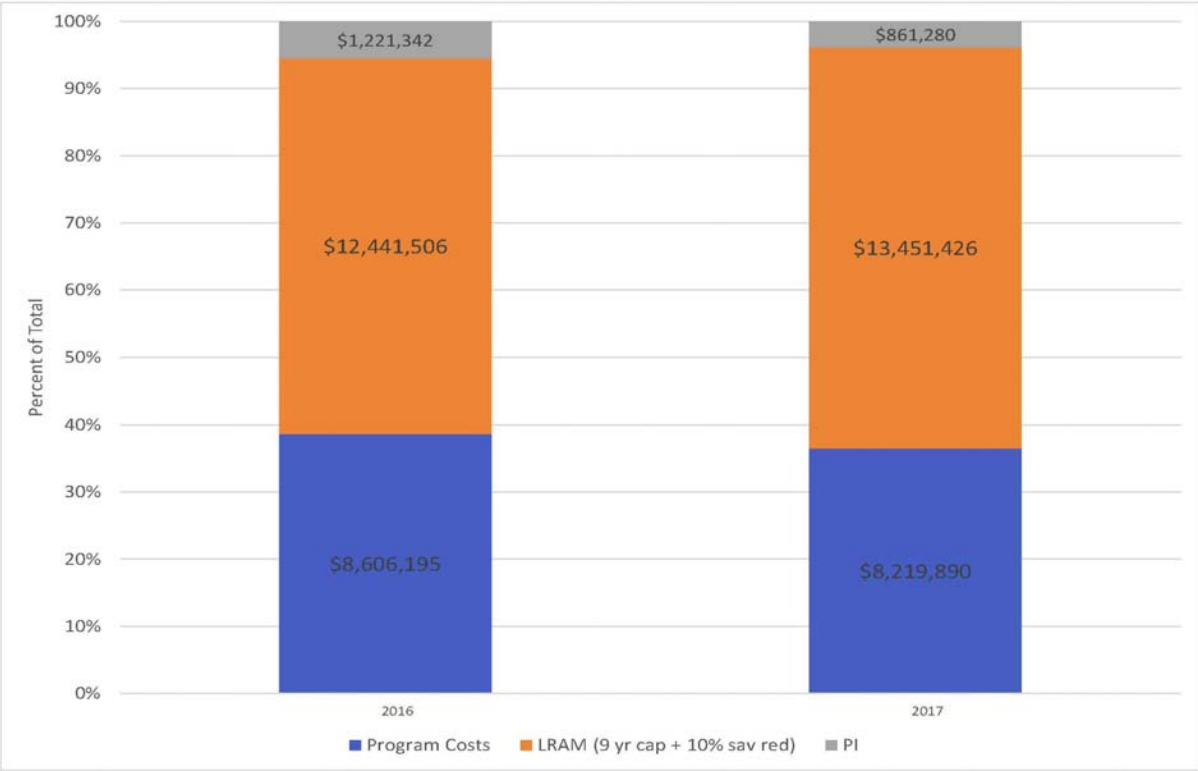


2 **Q. Under Vectren’s *modified* proposal for lifetime lost revenue recovery, what is the**
 3 **total amount of lost revenues that Vectren is requesting for the implementation of**
 4 **its 2016-2017 Plan?**

5 **A.** The total under the modified lost revenues proposal is \$25,892,931, which is 57.8% of
 6 the modified 2016-2017 Plan total of \$44,801,638. Figure 3 and Table 1, below show
 7 program costs, program incentives (“PI”), and lifetime lost revenue recovery requested
 8 (“LRAM”).

⁶ CAC Exhibit 1, Attachment NM-8.

1 **Figure 3. Vectren 2016-2017 DSM Budget with Vectren’s Modified Lost Revenue Proposal⁷**



2 **Q. Is it reasonable to allow Vectren to recover lost revenues under this modified**
3 **proposal?**

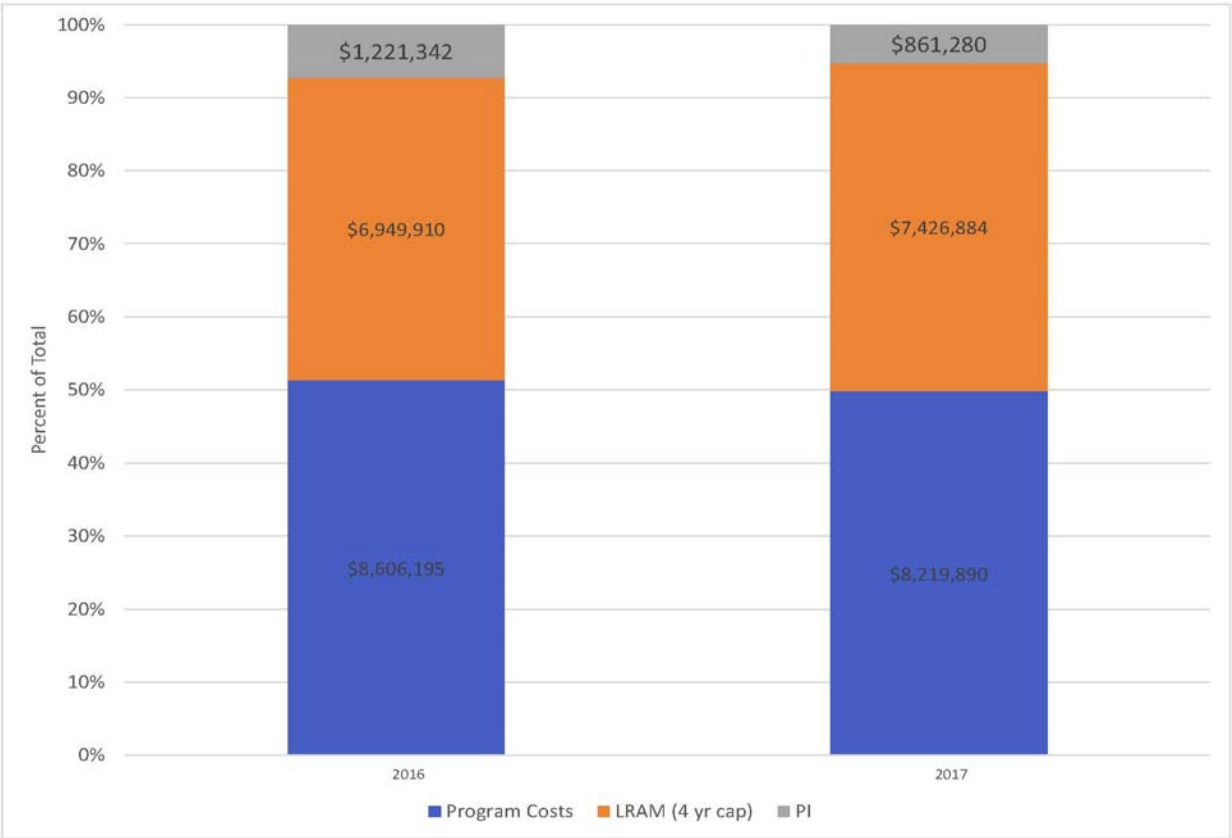
4 A. No. The pancake effect still exists, and the sheer total of lost revenues presented here at
5 \$25.9 million for just \$16.8 million in actual program delivery is unreasonable.

6 **Q. Under CAC’s proposal to cap lost revenue recovery at four years or the life of the**
7 **measure, whichever is less, what is the total amount of lost revenues that Vectren**
8 **would receive for the implementation of its 2016-2017 Plan?**

9 A. The CAC proposal for lost revenues amounts to \$14,376,794, which is 43.2% of a total of
10 \$33,285,501 that Vectren would receive for its 2016-2017, as shown in Figure 4 and
11 Table 1, below.

⁷ Attachment KRR-3.

1 **Figure 4. Vectren 2016-2017 DSM Budget with CAC’s 4 Year Cap Lost Revenue Proposal⁸**



2 **Q. Is it reasonable to allow Vectren to recover lost revenues under this modified**
3 **proposal?**

4 A. Yes. By capping the lost revenue recovery at the lesser of four years or the life of the
5 measure, this mitigates the Pancake Effect discussed by the Commission in prior orders
6 and discussed by the ACEEE report (CAC Exhibit 1, Attachment NM-8).

7 **Q. Can you provide a comparison in tabular format of the various lost revenue**
8 **proposals for consideration by the Commission?**

9 A. Yes. As shown in Table 1 below, the only reasonable option is to cap lost revenue
10 recovery at the lesser of 4 years or the life of the measure.

⁸ *Id.*

1
2

**Table 1. Vectren Proposed Program Costs, Performance Incentives,
and Various Lost Revenue Proposals⁹**

	2016	2017	Totals
Program Costs	\$8,606,195	\$8,219,890	\$16,826,085
Performance Incentives (assumes PI at 8%)	\$1,221,342	\$861,280	\$2,082,622
Lost Revenues (Lifetime)	\$16,246,894	\$18,016,905	\$34,263,799
Lost Revenues (Modified, 9 Year Cap + 10% savings reduced)	\$12,441,506	\$13,451,426	\$25,892,931
Lost Revenues (4 Year Cap)	\$6,949,910	\$7,426,884	\$14,376,794

3 **Q. What “specific factual findings” support (1) the rejection of Vectren’s DSM Plan as**
4 **unreasonable because of the lost revenue proposals and (2) a four-year threshold for**
5 **lost revenue recovery proposals in DSM Plans?**

6 A. There appear to be several specific factual findings already contemplated by the
7 Commission in its underlying order but which must be made more explicit to satisfy the
8 Court of Appeals. The Court explained in a footnote:

9 *Vectren South observes that although the Commission expressed “concern” about*
10 *the pancaking of lost-revenue recovery, it failed to explain “why it believes*
11 *pancaking is bad” or “why the amount of pancaking that will occur with a 4-year*
12 *cap is reasonable, but the amount that will occur with a smaller or larger cap is*
13 *not.” Appellant’s Br. at 39. On page 17 of its appellate brief, the Commission*

⁹ *Id.*

1 *quotes from a document that Mims cited regarding the alleged difficulty of*
2 *tracking the pancake effect over time, but the Commission did not specifically rely*
3 *on this document in its order or specifically find that the independent EM&V*
4 *required by statute (and approved by the Commission) is unable to adequately*
5 *account for this effect. The Commission addresses EM&V on pages 18 through 20*
6 *of its brief, but this is too little, too late. (Mem. Op. at 17, fn. 11.)*

7 As explained and supported in my testimony and attachments herein, and in CAC
8 Witness Mims' testimony and attachments already admitted into this evidentiary record,
9 the Commission should make specific factual findings to support a rejection of Vectren's
10 DSM Plan as unreasonable due to its unreasonable lost revenue RRAM proposal. The
11 Commission should also make specific findings to support its overall finding that a 4-
12 year cap on lost revenue recovery through a lost revenues RRAM is reasonable. These
13 findings should include:

- 14 • The Commission should specifically rely on the ACEEE report, admitted into the
15 record as CAC Exhibit 1, Attachment NM-8, in its order. The report provides an in-
16 depth analysis and state survey into the problem of pancaking of lost revenue
17 collection. I also discuss the problems with pancaking in the next section of this
18 testimony.
- 19 • The ACEEE report also shows a similar analysis from Minnesota wherein that
20 commission faced a similar issue with rising lost revenue costs for ratepayers,
21 specifically noting the frequency and intervals between general rate cases. In this
22 regard, the Commission should make a specific factual finding that four years is the
23 maximum reasonable term for a lost revenues RRAM before the utility must present
24 any remaining claimed lost revenues in a base rate case, and that any Plan proposal
25 that includes a lost revenues RRAM with a greater term than four years is also

1 unreasonable.

- 2 • The Commission should also find that although pancaking and piece-meal rate
 3 making problems can arise over any term between rate cases, the amount of
 4 pancaking that will occur with a four-year cap is reasonable because:
- 5 ○ A term greater than four years will create unreasonable difficulty in tracking the
 6 pancake effect over time. (*See* Mem. Op. at 17, footnote 11, and CAC Exhibit 1,
 7 NM-8 at 7.)
 - 8 ○ Lost revenues policies were created at a time when the period between rate cases
 9 was typically at four years or less. (*Id.*)
 - 10 ○ The Commission should consider citing to I.C. § 8-1-2-42.5, relating to “Periodic
 11 review of rates and charges,” and provides that:
 12 *Sec. 42.5. The commission shall by rule or order, consistent with the*
 13 *resources of the commission and the office of the utility consumer*
 14 *counselor, require that the basic rates and charges of all public,*
 15 *municipally owned, and cooperatively owned utilities (except those*
 16 *utilities described in IC 8-1-2-61.5) are subject to a regularly scheduled*
 17 *periodic review and revision by the commission. However, the commission*
 18 *shall conduct the periodic review at least once every four (4) years and*
 19 *may not authorize a filing for an increase in basic rates and charges more*
 20 *frequently than is permitted by operation of section 42(a) of this chapter.*
 - 21 • The Commission should find that a shorter term for a lost revenues RRAM would
 22 also be reasonable, but that the range of reasonableness for lost revenue recovery ends
 23 at four years.

24 **Q. What did the Court of Appeals ask the Commission to do with this case on remand?**

25 A. The Court of Appeals stated that:

1 *On remand, the Commission may either (1) issue specific factual findings to*
 2 *justify its implicit determination that Vectren South’s lost revenue recovery*
 3 *proposals are unreasonable, determine that the Plan is not reasonable in its*
 4 *entirety pursuant to Section 10(m), and allow Vectren South to submit a modified*
 5 *plan within a reasonable time; or (2) issue specific factual findings to justify a*
 6 *determination that the Plan is in fact reasonable in its entirety pursuant to Section*
 7 *10(k) and allow Vectren South to recover reasonable lost revenues in accordance*
 8 *with the Plan. (Mem. Op. at 18. Internal citations omitted.)*

9 **Q. What do you recommend that the Commission do?**

10 A. The Commission should do the former, not the latter. That is, the Commission should
 11 “issue specific factual findings to justify its implicit determination that Vectren South’s
 12 lost revenue recovery proposals are unreasonable, determine that the Plan is not
 13 reasonable in its entirety pursuant to Section 10(m), and allow Vectren South to submit a
 14 modified plan within a reasonable time.”

15
 16 **THE COMPANY’S POSITIONS ON RETAIL RATE ADJUSTMENT**

17 **Q. What did the Company propose in the lost revenues recovery component of its 2016-**
 18 **2017 Plan?**

19 A. The Company proposed that it be entitled to recover all lost revenues associated with
 20 savings that result from the entire useful life of implemented energy efficiency measures
 21 through a RRAM, or lost revenue adjustment mechanism (hereafter “RRAM”), without
 22 regard to whether the Company returned to the Commission for a full base rate case
 23 during the useful lives of the efficiency measures.

24 **Q. Is Vectren’s original lost revenue recovery proposal still unreasonable and does that**
 25 **require a rejection of the 2016-2017 DSM Plan as unreasonable on this basis alone?**

1 A. Yes.

2 **Q. Please explain.**

3 A. Energy efficiency measures generate sales reductions that yield the so-called “lost
4 revenues” that the Company is entitled to seek recovery for under Indiana law. Of course,
5 evaluation and measurement are necessary to ensure that the overall amount of lost
6 revenues to be collected is reasonable. Moreover, the rate mechanism used to collect
7 reasonable lost revenues must also be reasonable. As demonstrated in the record of Cause
8 No. 44645, the problems of “pancaking” and “piece-meal” or “single-issue” ratemaking
9 create serious problems of fairness and reasonableness if a RRAM is used for the entire
10 useful life of energy efficiency measures. For this reason, the Commission essentially
11 found that the Company proposal for lost revenue recovery was unreasonable and
12 imposed a four-year cap on the duration of lost revenue collection in its Order on March
13 23, 2016.

14 **Q. What are the problems with pancaking ratemaking?**

15 A. Pancaking can result in unreasonable rates due to the cumulative effects of lost revenue
16 collections through a RRAM in the later years of an efficiency portfolio. Beyond four
17 years, which is a period in which measure lives could reasonably be expected to be highly
18 coherent (factoring differentials in degradation and persistence for individual
19 installations), the RRAM would be subject to some volatility, as measures exited due to
20 end of useful life, and as new lost revenue collections were added due to subsequent Plan
21 approvals. The net result would be a growing and significant component of rates that
22 would, in the outer years of total Plan life, that would be large, erratic, unpredictable, and
23 increasingly difficult for customers to understand. Revenue recovery by the utility would
24 likewise become more erratic. Finally, as customer churn rates (customers moving in and
25 out of the service territory, or changing rate classes) increased, pancaked lost revenue

1 collections late in the portfolio life would increasingly deviate from cost-causation
2 principles, and create a significant risk of undue discrimination in inter- and intra-class
3 rates.

4 **Q. What is the problem with piece-meal or single-issue ratemaking?**

5 A. Ratemaking involves multitudes of costs, customer classes, and rate designs. Most of
6 these issues are interrelated and interactive. It is difficult and rare that a single aspect of
7 electric service rates, especially rates that reflect long-lived investment costs can be
8 addressed in isolation without impacting other aspects of costs and revenue recovery. The
9 issue of lost revenues associated with long-lived energy efficiency measures is such an
10 aspect of rates. Installed efficiency impacts the baseline of savings potential for future
11 programs, and may or may not support market transformation and implicit hurdle rates
12 for customer adoption of energy efficiency. As measures deployed in a portfolio age, the
13 environment—economic, social, and climatic—in which they operate changes,
14 confounding earlier assumptions and requiring mid-course reevaluation. As energy
15 efficiency benefits accrue, they defer or avoid fixed investments in the grid and
16 associated infrastructure, realizing avoided cost savings and reducing the revenue
17 requirement fairly recovered from customers (even if not impacting lost revenues in the
18 short-term). For these and other reasons, piece-meal or single-issue rate making is
19 generally frowned upon in electricity rate making as leading to potential unfairness and
20 inefficiency in price signals. In a dynamic electricity industry environment, such as we
21 are experiencing in the United States today, the problems associated with piece-meal or
22 single-issue rate making are even more serious.

23 **Q. Is it likely that a lost revenues RRAM that runs for the full useful life of efficiency**
24 **measures in a Plan will cause pancaking and piece-meal rate making problems?**

25 A. Yes. The Company proposal for its lost revenues RRAM is therefore unreasonable and

1 renders its Plan proposal likewise unreasonable.

2 **Q. Is there a simple and reasonable remedy to these problems?**

3 A. Yes. The Commission approach in its Order of March 23, 2016 provides a reasonable
4 alternative to the unreasonable Company proposal in this Cause. An RRAM that operates
5 for a limited duration of the portfolio useful life—for no more than four years—is
6 reasonable. Any remaining reasonable lost revenues should be evaluated in the context of
7 a full and fair examination of base rates and the Company’s total, updated revenue
8 requirements. This approach is a reasonable accommodation of the Company’s claim to
9 recovery of reasonable lost revenues and the Commission’s obligations to ensure that
10 rates are just and reasonable.

11
12 **PERVERSE INCENTIVES AND LOST REVENUE RECOVERY**

13 **Q. Company witnesses Harris and Albertson assert that limiting the duration of the**
14 **RRAM to four years would create a perverse incentive for the Company to favor**
15 **programs with shorter term useful lives to avoid the risk of under-recovery of lost**
16 **revenues through the RRAM. Is this a valid concern?**

17 A. The Company assertion that it will be driven by such a perverse incentive raises serious
18 questions about the credibility of its approach to energy efficiency planning. First, it flies
19 in the face of reason that the Company staff would be so unprofessional as to distort
20 energy efficiency program optimization against a four-year target. Second, the position
21 ignores the role of the Staff, stakeholders, and others in evaluation of Plan proposals.
22 Third, the position implies that the Company would choose uneconomic program
23 outcomes solely because they would last less than four years. Fourth, the position
24 assumes that the Company would not have an opportunity to incorporate unrecovered lost
25 revenues in a base rate filing. The fact that these witnesses are willing to make this

1 argument on behalf of the Company does raise the need for greater scrutiny of Company
2 energy efficiency Plans for other such manipulative and uneconomic behaviors.

3
4 **INCREASED FIXED CHARGES AS A LOST REVENUE MITIGATION MEASURE**

5 **Q. Company witness Albertson testifies that the magnitude of lost revenues could be
6 mitigated through increased fixed customer charges. Do you agree?**

7 A. Company witness Albertson's comments on reducing lost revenues through increased
8 fixed customer charges for embedded fixed costs are disingenuous, inapt, and inaccurate.
9 Guaranteeing fixed cost recovery through non-bypassable fixed customer charges is not
10 relevant to the issues in this proceeding. As such, this proposal is nothing more than a
11 disingenuous argument for the extraction of monopoly rents—revenues that the Company
12 seeks to take from customers solely because they are a monopoly not facing real
13 competition. Finally, guaranteeing fixed cost recovery through fixed charges creates a
14 very real perverse incentive to increase fixed cost investments beyond economic levels,
15 and while this might increase rates and make more energy efficiency superficially
16 economic, it would result in Indiana's economy becoming less efficient overall as a result
17 of higher electric rates. Witness Albertson's assertion should be ignored as a somewhat
18 cynical proposal to guarantee utility profits at the expense of rate payers and economic
19 efficiency.

1 **MORE FREQUENT RATE CASES AND RATE CASE EXPENSES**

2 **Q. Company witness Albertson alludes to the expense and difficulty of base rate cases**
 3 **as a factor weighing against the reasonableness of relying on rate cases as a means**
 4 **for addressing lost revenue recovery after the four-year period of a RRAM. Do you**
 5 **agree?**

6 A. No. The witness cited *dicta*¹⁰ in the Indiana Court of Appeals decision, at page 18,
 7 footnote 15, in which the Court specifically declined to opine on the frequency of rate
 8 cases, to the effect that rate cases are “expensive, time consuming, and sometimes result
 9 in large, sudden rate hikes for customers.” (*NIPSCO Indus. Grp. v. N. Ind. Pub. Serv. Co.*,
 10 31 N.E.3d 1, 4 (Ind. Ct. App. 2015)). Citation to such *dicta* is not dispositive, and the
 11 assertion is flawed on its face. More frequent rate cases are a sound regulatory strategy to
 12 reduce the complexity, expense, and difficulty of such proceedings. More frequent rate
 13 cases are also economically efficient and more fair in circumstances of dynamic market
 14 conditions such as are in existence today.

15
 16 **THE COMPANY NEW PROPOSAL FOR CALCULATING THE RRAM LEVEL**

17 **Q. Is Vectren’s new modified lost revenue recovery proposal also so unreasonable as to**
 18 **require a rejection of the 2016-2017 DSM Plan as unreasonable on this basis alone?**

19 A. Yes. On remand, and for the first time in this long-running Cause, the Company proposes
 20 a new method for calculating the RRAM level for lost revenue recovery. The proposal
 21 cannot be fully and fairly evaluated as presented and was not subject to scrutiny in the

¹⁰ “Opinions of a judge that do not embody the resolution or determination of the specific case before the court. Expressions in a court’s opinion that go beyond the facts before the court and therefore are individual views of the author of the opinion and not binding in subsequent cases as legal precedent. The plural of *dictum*.” West’s Encyclopedia of American Law, edition 2. Copyright 2008 The Gale Group, Inc. All rights reserved.

1 proceeding to date. While it appears to concede that the Company proposal for full
2 recovery of lost revenues through a lost revenues RRAM set at the full useful life of all
3 measures is unreasonable, the new approach is not appropriate for consideration or
4 adoption absent much greater scrutiny against the factors impacting just and reasonable
5 rates previously discussed.

6 **Q. What does the Company propose?**

7 A. Essentially, the new Company proposal has two parts. First, the Company would
8 combine the lost revenues of all measures through a weighting process to develop a
9 single measure life for the entire Plan, and then the Company would reduce the overall
10 level of the lost revenue collections by 10% as a conservative measure. The Company
11 asserts that its calculations show that this results in a 24% reduction in total lost revenues
12 collected.

13 **Q. Does the Company provide any data or tools to evaluate the new proposal?**

14 A. The Company provides only the most superficial assertions, in table form, (Table RHH-
15 3) regarding the operation of the program against a set of assumptions relating to the Plan
16 proposed in this Cause. The procedural schedule in this Cause did not allow for detailed
17 evaluation of the proposal against differing portfolio assumptions.

18 **Q. Does the weighting and averaging method create any sound or perverse incentives
19 regarding the construction and proposal of energy efficiency proposals by the
20 Company?**

21 A. The data and methodology description provided by the Company does not allow for an
22 evaluation of whether the proposed methodology would create sound or perverse
23 incentives for the Company, or improve or weaken the strength and quality of its Plan
24 proposals.

1 **Q. Does the Company’s weighted average measure life approach address the problems**
2 **of pancaking identified by the parties in this case?**

3 A. The weighted average measure life is a mathematical solution to the rate volatility that
4 results from long-term pancaking of an RRAM, but potentially creates greater problems
5 in terms of rate fairness. That is, the method would “smooth out” year to year volatility in
6 the later years of the portfolio useful life by use of an averaging calculation. As I
7 demonstrated earlier, however, the Company’s modified approach continues to result in
8 unreasonable financial impacts. To the extent the Company attempts to do this analysis
9 and modeling in rebuttal, that would be highly inappropriate and prejudicial to other
10 parties.

11 **Q. What is the potential problem of over-recovery of lost revenues associated with the**
12 **Company’s proposal?**

13 A. Without further analysis based on actual program portfolio scenarios, it is impossible to
14 determine how the weighted average value would change depending on the relative size
15 and useful life of portfolio components. The use of a single weighted average could also
16 result in lost revenues in shorter-term measures being collected long after the measure
17 stopped saving energy. All of these potential problems must be evaluated much more
18 thoroughly before the Company lost revenue proposal and, therefore, its Plan can be
19 found to be reasonable under Indiana law.

THE COMPANY USE OF THE INDEPENDENT EVALUATOR AS
AN ADVOCATE IN THIS PROCEEDING

1
2
3 **Q. Do you have any opinion on the Company offering the testimony of Dr. M. Sami**
4 **Khawaja of the Cadmus Group to support its lost revenues RRAM proposal?**

5 A. The proposal to offer the testimony of Dr. Khawaja in this proceeding is extremely
6 disturbing. Dr. Khawaja is the Chief Economist of the Cadmus Group, which has been
7 retained by the Company to perform evaluation services for its energy efficiency
8 programs for the past eight years. Measurement, evaluation, and verification procedures
9 must be independent under I.C. § 8-1-8.5-10(h)(4). The overall reasonableness test that
10 must be applied to each DSM plan in I.C. § 8-1-8.5-10(j) also requires the Commission to
11 consider “[t]he inclusion and reasonableness of procedures to evaluate, measure, and
12 verify the results of the energy efficiency programs included in the plan...”

13 Dr. Khawaja appears in this proceeding as an advocate for the Company’s new
14 lost revenues RRAM design proposal, and offers an opinion on that proposal. Therefore,
15 to see Dr. Khawaja appear in this proceeding as an advocate in this matter is a conflict of
16 interest with his firm’s role as an independent evaluator and casts doubt on the integrity
17 of the firm’s work as an independent evaluator and as an advocate in this proceeding.

18 **Q. Did the Company coordinate with the Vectren Oversight Board, offer any**
19 **explanation of its decision to sponsor Dr. Khawaja’s testimony, or address the**
20 **impact of Dr. Khawaja’s testimony on the independence of the review of the**
21 **Company’s energy efficiency programs?**

22 A. No. In response to CAC DR 7-10 and 7-11,¹¹ the Company offered no explanation of its
23 action and implied, without stating, that it did not coordinate with the Vectren Oversight
24 Board in hiring Cadmus and Dr. Khawaja to advocate for its proposal in this case.

¹¹ Attachment KRR-4.

1 **Q. Are there other sources the Commission should consider when addressing the**
 2 **threatened independence of EM&V activities at issue in this Cause?**

3 A. Yes. In Cause No. 42693 S1 at pp. 43-47, the Commission ordered the establishment and
 4 maintenance of an evaluation framework to govern EM&V activities. Ratepayer-funded
 5 documents were created, including the Indiana Evaluation Framework¹² and the Indiana
 6 Technical Resource Manual¹³—both are essential documents for EM&V activities and
 7 for the calculation of lost revenues. Although the legislature has forbidden the statewide
 8 delivery and implementation of DSM programs under SEA 340(2014), it has not
 9 forbidden a statewide framework for EM&V activities, and the Commission should
 10 continue the maintenance and use of these Indiana-specific EM&V documents.

11 The Indiana Evaluation Framework highlights the need for independence of
 12 EM&V activities:

13 • “For this Framework, three purposes of net savings are identified. 1. To
 14 understand the level of net savings achieved by the program and the portfolio
 15 to help determine which program to offer in the future. 2. For use in utility-
 16 specific calculations of lost revenues associated with the energy efficiency
 17 programs. 3. As a critical evaluation metric to be used for improving program
 18 design and implementation. Combined with process evaluations which assess
 19 program administration and operations and uncover processes that are
 20 ineffective or not well conceived, the net savings metric assists program

¹² Indiana Evaluation Framework, October 9, 2012, available at:
[https://iurc.portal.in.gov/entity/sharepointdocumentlocation/72a11af8-9484-e611-8124-1458d04ea8b8/bb9c6bba-fd52-45ad-8e64-a444aef13c39?file=dmccall_10_8_20123-19-40pm\[1\].pdf](https://iurc.portal.in.gov/entity/sharepointdocumentlocation/72a11af8-9484-e611-8124-1458d04ea8b8/bb9c6bba-fd52-45ad-8e64-a444aef13c39?file=dmccall_10_8_20123-19-40pm[1].pdf) (CAC Administrative Notice Exhibit 4 (already noticed by the Commission in the underlying cause)).

¹³ The most recent version, Version 2.2, was already admitted into the record in the underlying cause as CAC Exhibit 1, Attachment NM-16.

1 implementation toward performance improvements.” (Evaluation Framework
2 at p. 13)

- 3 • “Following the Subcommittee’s review of the evaluation plan, a vote to accept
4 the plans and approve them for implementation will be taken. If the plans are
5 not approved, the Evaluation Administrator will alter them to meet the desired
6 needs of the Subcommittee. However, it is critical to ensure independence of
7 the Evaluation Administrator. The Subcommittee will not specify the
8 evaluation approaches to be used in the study. The Evaluation Administrator
9 shall design the evaluation efforts as independent evaluation contactors.”

10 (Evaluation Framework at p 27)

- 11 • **“Independence.** The evaluation efforts for Indiana’s core programs are to be
12 independent of the core program design, approval and service delivery
13 responsibilities. Evaluation contactors can provide support to the core
14 program design process by providing evaluation research information, market
15 condition or operations information, program related data, or information
16 needed to support the program design effort, but are not to be responsible for
17 developing program core program plans or involved with the submission of
18 those plans for review and approval by the DSMCC. Evaluation contactors are
19 to maintain an arms-length relationship with the core program design,
20 approval and delivery process within the State of Indiana. Evaluation efforts
21 are to avoid not only conflicts of interest but also the appearance of conflicts
22 of interests. The evaluators should be independent professionals who do not
23 benefit, or appear to benefit, from the study’s findings. The evaluations are also

1 to be independent of the TPA, such that the Evaluation Administrator
2 independently develops their study approaches, independently implements those
3 approaches, and independently reports the results from the associated analysis.
4 While evaluation plans, budgets, timelines and activities are to be approved by
5 the Subcommittee prior to their implementation, the evaluation efforts will be
6 planned and conducted by independent evaluation professionals. The core
7 program evaluation team must not have or appear to have any conflicting
8 relationships with the core program development, approval or implementation
9 process.” Evaluation Framework at 32.

10 In recent Commission orders interpreting SEA 412, including the order in this
11 underlying Cause, the Commission has relied upon a report by the American Council for
12 an Energy Efficient Economy which discusses the pancaking effect of lifetime lost
13 revenues. That report is already part of this evidentiary record, labeled as CAC Exhibit 1,
14 Attachment NM-8, and notes:

15 *GOOD EM&V IS IMPORTANT. Allowing utilities to recover the revenues lost*
16 *due to implementation of efficiency programs necessitates the need for accurate*
17 *evaluation of programs. In order to prevent overcharging customers or*
18 *undervaluing a utility’s lost revenues, utilities and regulators need to get the*
19 *savings right. Evaluation of savings is controversial in many of the states in which*
20 *we conducted interviews. Though evaluation procedures were already in place for*
21 *efficiency programs in many states, when lost revenues were at stake the scrutiny*
22 *became far greater.*

1 **Q. In light of the very real conflict of interest that arises as a result of Dr. Khawaja’s**
 2 **testimony in this case, what weight should the Commission take in this proceeding**
 3 **and subsequent Plan evaluations?**

4 A. The Commission should disregard Dr. Khawaja’s testimony in its entirety. Moreover, as
 5 the Cadmus Group’s independence has been completely compromised, the Company
 6 should be directed to seek a new firm to serve as independent evaluator for its energy
 7 efficiency programs and plans on a going forward basis and/or adopt the proposal made
 8 by CAC in Cause No. 44841 that the Commission use an Independent Evaluation
 9 Monitor (“IEM”) modeled after the IEM in Arkansas.¹⁴

10 **Q. What is the role of an IEM?**

11 A. An IEM would serve in a technical advisory role to assist the Commission and by
 12 extension, other stakeholders, in understanding the EM&V reports by the utilities’
 13 vendors as well as take them a step further. Specifically, the IEM would help the
 14 Commission assess the performance of the EM&V vendors, provide recommendations to
 15 improve EM&V activities, and assist in setting priorities for EM&V activities.¹⁵

16 **Q. Why do believe an IEM would be helpful in Indiana?**

17 A. Effective EM&V is not a static activity. When EM&V activities are incorporated from
 18 design to implementation of a DSM program, the feedback loop of EM&V is more
 19 effective.

20 Currently, it is difficult to ensure that the feedback loop is in place for the many
 21 programs administered by Indiana utilities. In addition, the TRM is not being routinely
 22 updated which likely means it is rapidly becoming out of date.¹⁶ The IEM can help ensure

¹⁴ See Direct Testimony of Shawn M. Kelly on behalf of Citizens Action Coalition of Indiana, at 45-47, filed in IURC Cause No. 44841.

¹⁵ An example of the IEM’s report in Arkansas is given here: http://www.apscservices.info/pdf/13/13-002-U_211_1.pdf.

¹⁶ For example, “IPL in consultation with AEG, strayed significantly from the IN TRM 2.2 stated assumptions for LED lighting measures. LED lighting costs and performance have shifted

1 that these types of necessary EM&V activities occur and utilize best practices in the
2 industry.

3 **Q. How would the IEM be selected and compensated?**

4 **A.** CAC proposes a model similar to that of Arkansas in which the utility and non-utility
5 members of the DSM Oversight Boards work together to draft an RFP and then review
6 the responses to the RFP. Where the parties cannot reach unanimous consensus on the
7 text of the RFP, the Commission would have final say. Similarly, where the parties
8 cannot select the IEM vendor(s) unanimously, the Commission would have final say. The
9 IEM would be paid for by each of the electric utilities regulated by the Commission with
10 their portions being weighted by number of customers.

11 **RECOMMENDATIONS**

12 **Q. What are your recommendations to the Commission?**

13 **A.** Based on my review of the evidence in this case, I make several recommendations to
14 guide the Commission's response to the direction from the Court of Appeals and to the
15 Company's proposals on remand of this Cause:

- 16 • The Commission should explicitly find that the Company's 2016-2017 Plan is not
17 reasonable due to the unreasonableness of its proposed lost revenue retail rate
18 recovery mechanism.
- 19 • The Commission should reject the Company's proposal for a new mechanism for
20 calculation of its proposed lost revenues RRAM level based on weighted average
21 measure lives and a 10% discount.
- 22 • The Commission should reject as overly broad the position that the role of lost

dramatically....IN TRM's stated incremental measure cost of \$30.91 for residential LED lamps, meaning that the average residential LED lamp is approximately \$30 more than the market cost to purchase the baseline equivalent." Cause No. 44792, Petitioner's Exhibit 2, p. 5 (May 26, 2016).

1 revenue recovery is to put a utility in the same revenue position it would have been in
2 but for the implementation of energy efficiency measures; and instead, the
3 Commission should confirm that RRAM proposals, like rate proposals must be
4 designed and approved to collect rates that are, in magnitude and impact, just and
5 reasonable.

- 6 • The Commission should specifically find that several factors inform whether a
7 RRAM proposal will be just and reasonable, including those commonly articulated in
8 rate making treatises, and the following:
 - 9 ○ Whether the mechanism will result in excessively large charges imposed
10 outside of a full rate case—often known as piece-meal or single-issue rate
11 making.
 - 12 ○ Whether the mechanism will require evaluation of data collected over
13 excessively long periods when the charges collected through the mechanism
14 are finally reconciled in the context of a full rate case—an issue of
15 administrative efficiency and fairness to all parties in the rate case.
 - 16 ○ Whether the mechanism will excessively delay the evaluation and recognition
17 of improved system efficiencies and reduced fixed infrastructure costs and
18 other benefits of high-performance energy efficiency programs—an issue of
19 efficiency program evaluation in the context of utility system costs.
 - 20 ○ Whether the mechanism will increase the likelihood that energy efficiency
21 programs are incorrectly perceived by customers as larger and different
22 expenses by being singled out on a customer bill when other utility costs are
23 rolled into base rates—an issue of fair communication of costs and efficient
24 price signals for customers.
 - 25 ○ Whether the mechanism will likely result in constantly changing charges due

1 to measure lives ending, and new savings beginning over longer periods of
2 time—an issue of rate understandability and bill budgeting for customers.

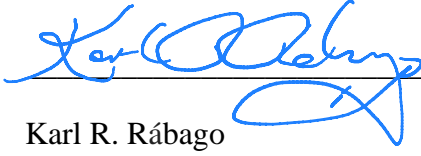
- 3 • The Commission should find that in light of these factors and its general duty to
4 ensure just and reasonable rates are charged by electric utilities, the Company’s
5 proposal for a lost revenues RRAM and, therefore, its 2016-2017 Plan, are not
6 reasonable and will not result in rates that are just and reasonable.
- 7 • The Commission should reaffirm and detail why limiting the duration of the lost
8 revenues RRAM to four years is reasonable, especially in light of the Company’s
9 ongoing right to petition for resetting its base rates, to include unrecovered lost
10 revenues.
- 11 • The Commission should reject the Company’s offered evidence from Company
12 witness Dr. M. Sami Khawaja in its entirety due to a conflict of interest between the
13 witness’ role as an advocate on behalf of the Company for its proposed RRAM and
14 his role as chief economist for the Cadmus firm, which is charged with providing
15 independent evaluation of the Company’s energy efficiency programs. In addition,
16 the Commission should order the Company to secure the services of a new, truly
17 independent evaluator for its energy efficiency programs on a going forward basis
18 and/or adopt the proposal originally made by CAC in Cause No. 44841 that the
19 Commission use an Independent Evaluation Monitor (“IEM”).

20 **Q. Does this conclude your testimony?**

21 A. Yes.

VERIFICATION

I, Karl R. Rábago, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.


Karl R. Rábago

July 26, 2017
Date

ATTACHMENT KRR-1

Karl R. Rábago

Rábago Energy Limited Liability Company
62 Prospect Street, White Plains, New York 10606

c: +1.512.968.7543 e: karl@rabagoenergy.com

Summary

Nationally recognized leader and innovator in electricity and energy law, policy, and regulation. Experienced as a public utility regulatory commissioner, educator, research and development program manager, utility executive, business builder, federal executive, corporate sustainability leader, consultant, and advocate. Highly proficient in advising, managing, and interacting with government agencies and committees, the media, citizen groups, and business associations. Successful track record of working with US Congress, state legislatures, governors, regulators, city councils, business leaders, researchers, academia, and community groups. National and international contacts through experience with Pace Energy and Climate Center, Austin Energy, AES Corporation, US Department of Energy, Texas Public Utility Commission, Jicarilla Apache Tribal Utility Authority, Cargill Dow LLC (now NatureWorks, LLC), Rocky Mountain Institute, CH2M HILL, Houston Advanced Research Center, Environmental Defense Fund, and others. Skilled attorney, negotiator, and advisor with more than twenty-five years of experience working with diverse stakeholder communities in electricity policy and regulation, emerging energy markets development, clean energy technology development, electric utility restructuring, smart grid development, and the implementation of sustainability principles. Extensive regulatory practice experience. Nationally recognized speaker on energy, environment and sustainable development matters. Managed staff as large as 250; responsible for operations of research facilities with staff in excess of 600. Developed and managed budgets in excess of \$300 million. Law teaching experience at Pace University School of Law, University of Houston Law Center, and U.S. Military Academy at West Point. Post-doctorate degrees in environmental and military law. Military veteran.

Employment

PACE ENERGY AND CLIMATE CENTER, PACE UNIVERSITY SCHOOL OF LAW

Executive Director: May 2014—Present.

Leader of a team of professional and technical experts in energy and climate law, policy, and regulation. Secure funding for and manage execution of research, market development support, and advisory services for a wide range of funders, clients, and stakeholders with the overall goal of advancing clean energy deployment, climate responsibility, and market efficiency. Supervise a team of employees, consultants, and adjunct researchers. Provide learning and development opportunities for law students. Coordinate efforts of the Center with and support the environmental law faculty. Additional activities:

- Co-Director and Principal Investigator, Northeast Solar Energy Market Coalition (2015-present). The NESEMC is a US Department of Energy's SunShot Initiative Solar Market Pathways project. Funded under a cooperative agreement between the US DOE and Pace University, the NESEMC seeks to harmonize solar market policy and advance best policy and regulatory practices in the northeast United States.
- Chairman of the Board, Center for Resource Solutions (1997-present). CRS is a not-for-profit organization based at the Presidio in California. CRS developed and manages the Green-e Renewable Electricity Brand, a nationally and internationally recognized branding program for green power and green pricing products and programs. Past chair of the Green-e Governance Board (formerly the Green Power Board).

Karl R. Rábago

- Director, Interstate Renewable Energy Council (IREC) (2012-present). IREC focuses on issues impacting expanded renewable energy use such as rules that support renewable energy and distributed resources in a restructured market, connecting small-scale renewables to the utility grid, developing quality credentials that indicate a level of knowledge and skills competency for renewable energy professionals.

RÁBAGO ENERGY LLC

Principal: July 2012—Present. Consulting practice dedicated to providing expert witness and policy formulation advice and services to organizations in the clean and advanced energy sectors. Recognized national leader in development and implementation of award-winning “Value of Solar” alternative to traditional net metering. Additional information at www.rabagoenergy.com.

AUSTIN ENERGY – THE CITY OF AUSTIN, TEXAS

Vice President, Distributed Energy Services: April 2009—June 2012. Executive in 8th largest public power electric utility serving more than one million people in central Texas. Responsible for management and oversight of energy efficiency, demand response, and conservation programs; low-income weatherization; distributed solar and other renewable energy technologies; green buildings program; key accounts relationships; electric vehicle infrastructure; and market research and product development. Executive sponsor of Austin Energy’s participation in an innovative federally-funded smart grid demonstration project led by the Pecan Street Project. Led teams that successfully secured over \$39 million in federal stimulus funds for energy efficiency, smart grid, and advanced electric transportation initiatives. Additional activities included:

- Director, Renewable Energy Markets Association. REMA is a trade association dedicated to maintaining and strengthening renewable energy markets in the United States.
- Membership on Pedernales Electric Cooperative Member Advisory Board. Invited by the Board of Directors to sit on first-ever board to provide formal input and guidance on energy efficiency and renewable energy issues for the nation’s largest electric cooperative.

THE AES CORPORATION

Director, Government & Regulatory Affairs: June 2006—December 2008. Government and regulatory affairs manager for AES Wind Generation, one of the largest wind companies in the country. Manage a portfolio of regulatory and legislative initiatives to support wind energy market development in Texas, across the United States, and in many international markets. Active in national policy and the wind industry through work with the American Wind Energy Association as a participant on the organization’s leadership council. Also served as Managing Director, Standards and Practices, for Greenhouse Gas Services, LLC, a GE and AES venture committed to generating and marketing greenhouse gas credits to the U.S. voluntary market. Authored and implemented a standard of practice based on ISO 14064 and industry best practices. Commissioned the development of a suite of methodologies and tools for various greenhouse gas credit-producing technologies. Also served as Director, Global Regulatory Affairs, providing regulatory support and group management to AES’s international electric utility operations on five continents. Additional activities:

- Director and past Chair, Jicarilla Apache Nation Utility Authority (1998 to 2008). Located in New Mexico, the JAUA is an independent utility developing profitable and autonomous utility services that provides natural gas, water utility services, low income housing, and energy planning for the Nation. Authored “First Steps” renewable energy and energy efficiency strategic plan.

Karl R. Rábago

HOUSTON ADVANCED RESEARCH CENTER

Group Director, Energy and Buildings Solutions: December 2003—May 2006. Leader of energy and building science staff at a mission-driven not-for-profit contract research organization based in The Woodlands, Texas. Responsible for developing, maintaining and expanding upon technology development, application, and commercialization support programmatic activities, including the Center for Fuel Cell Research and Applications, an industry-driven testing and evaluation center for near-commercial fuel cell generators; the Gulf Coast Combined Heat and Power Application Center, a state and federally funded initiative; and the High Performance Green Buildings Practice, a consulting and outreach initiative. Secured funding for major new initiative in carbon nanotechnology applications in the energy sector. Developed and launched new and integrated program activities relating to hydrogen energy technologies, combined heat and power, distributed energy resources, renewable energy, energy efficiency, green buildings, and regional clean energy development. Active participant in policy development and regulatory implementation in Texas, the Southwest, and national venues. Frequently engaged with policy, regulatory, and market leaders in the region and internationally. Additional activities:

- President, Texas Renewable Energy Industries Association. As elected president of the statewide business association, leader and manager of successful efforts to secure and implement significant expansion of the state's renewable portfolio standard as well as other policy, regulatory, and market development activities.
- Director, Southwest Biofuels Initiative. Established the Initiative acts as an umbrella structure for a number of biofuels related projects, including emissions evaluation for a stationary biodiesel pilot project, feedstock development, and others.
- Member, Committee to Study the Environmental Impacts of Windpower, National Academies of Science National Research Council. The Committee was chartered by Congress and the Council on Environmental Quality to assess the impacts of wind power on the environment.
- Advisory Board Member, Environmental & Energy Law & Policy Journal, University of Houston Law Center.

CARGILL DOW LLC (NOW NATUREWORKS, LLC)

Sustainability Alliances Leader: April 2002—December 2003. Founded in 1997, NatureWorks, LLC is based in Minnetonka, Minnesota. Integrated sustainability principles into all aspects of a ground-breaking biobased polymer manufacturing venture. Responsible for maintaining, enhancing and building relationships with stakeholders in the worldwide sustainability community, as well as managing corporate and external sustainability initiatives. NatureWorks is the first company to offer its customers a family of polymers (polylactide – “PLA”) derived entirely from annually renewable resources with the cost and performance necessary to compete with packaging materials and traditional fibers; now marketed under the brand name “Ingeo.”

- Successfully completed Minnesota Management Institute at University of Minnesota Carlson School of Management, an alternative to an executive MBA program that surveyed fundamentals and new developments in finance, accounting, operations management, strategic planning, and human resource management.

ROCKY MOUNTAIN INSTITUTE

Managing Director/Principal: October 1999–April 2002. In two years, co-led the team and grew annual revenues from approximately \$300,000 to more than \$2 million in annual grant and consulting income. Co-authored “Small Is Profitable,” a comprehensive analysis of the benefits of distributed energy resources. Worked to increase market opportunities for clean and distributed

Karl R. Rábago

energy resources through consulting, research, and publication activities. Provided consulting and advisory services to help business and government clients achieve sustainability through application and incorporation of Natural Capitalism principles. Frequent appearance in media at international, national, regional and local levels.

- President of the Board, Texas Ratepayers Organization to Save Energy. Texas R.O.S.E. is a non-profit organization advocating low-income consumer issues and energy efficiency programs.
- Co-Founder and Chair of the Advisory Board, Renewable Energy Policy Project-Center for Renewable Energy and Sustainable Technology. REPP-CREST was a national non-profit research and internet services organization.

CH2M HILL

Vice President, Energy, Environment and Systems Group: July 1998–August 1999. Responsible for providing consulting services to a wide range of energy-related businesses and organizations, and for creating new business opportunities in the energy industry for an established engineering and consulting firm. Completed comprehensive electric utility restructuring studies for the states of Colorado and Alaska.

PLANERGY

Vice President, New Energy Markets: January 1998–July 1998. Responsible for developing and managing new business opportunities for the energy services market. Provided consulting and advisory services to utility and energy service companies.

ENVIRONMENTAL DEFENSE FUND

Energy Program Manager: March 1996–January 1998. Managed renewable energy, energy efficiency, and electric utility restructuring programs for a not-for-profit environmental group with a staff of 160 and over 300,000 members. Led regulatory intervention activities in Texas and California. In Texas, played a key role in crafting Deliberative Polling processes. Initiated and managed nationwide collaborative activities aimed at increasing use of renewable energy and energy efficiency technologies in the electric utility industry, including the Green-e Certification Program, Power Scorecard, and others. Participated in national environmental and energy advocacy networks, including the Energy Advocates Network, the National Wind Coordinating Committee, the NCSL Advisory Committee on Energy, and the PV-COMPACT Coordinating Council. Frequently appeared before the Texas Legislature, Austin City Council, and regulatory commissions on electric restructuring issues.

UNITED STATES DEPARTMENT OF ENERGY

Deputy Assistant Secretary, Utility Technologies: January 1995–March 1996. Manager of the Department's programs in renewable energy technologies and systems, electric energy systems, energy efficiency, and integrated resource planning. Supervised technology research, development and deployment activities in photovoltaics, wind energy, geothermal energy, solar thermal energy, biomass energy, high-temperature superconductivity, transmission and distribution, hydrogen, and electric and magnetic fields. Developed, coordinated, and advised on legislation, policy, and renewable energy technology development within the Department, among other agencies, and with Congress. Managed, coordinated, and developed international agreements for cooperative activities in renewable energy and utility sector policy, regulation, and market development between the Department and counterpart foreign national entities. Established and enhanced partnerships with stakeholder groups, including technology firms, electric utility companies, state and local governments, and associations. Supervised development

Karl R. Rábago

and deployment support activities at national laboratories. Developed, advocated and managed a Congressional budget appropriation of approximately \$300 million.

STATE OF TEXAS

Commissioner, Public Utility Commission of Texas. May 1992–December 1994. Appointed by Governor Ann W. Richards. Regulated electric and telephone utilities in Texas. Laid the groundwork for legislative and regulatory adoption of integrated resource planning, electric utility restructuring, and significantly increased use of renewable energy and energy efficiency resources. Co-chair and organizer of the Texas Sustainable Energy Development Council. Vice-Chair of the National Association of Regulatory Utility Commissioners (NARUC) Committee on Energy Conservation. Member and co-creator of the Photovoltaic Collaborative Market Project to Accelerate Commercial Technology (PV-COMPACT). Member, Southern States Energy Board Integrated Resource Planning Task Force. Member of the University of Houston Environmental Institute Board of Advisors.

LAW TEACHING

Professor for a Designated Service: Pace University Law School, 2014-present. Non-tenured member of faculty. Courses taught: Energy Law. Supervise a student clinical effort that engages in a wide range of advocacy, analysis, and research activities in support of the mission of the Pace Energy and Climate Center.

Associate Professor of Law: University of Houston Law Center, 1990–1992. Full time, tenure track member of faculty. Courses taught: Criminal Law, Environmental Law, Criminal Procedure, Environmental Crimes Seminar, Wildlife Protection Law. Provided *pro bono* legal services in administrative proceedings and filings at the Texas Public Utility Commission.

Assistant Professor: United States Military Academy, West Point, New York, 1988–1990. Member of the faculty in the Department of Law. Honorably discharged in August 1990, as Major in the Regular Army. Courses taught: Constitutional Law, Military Law, and Environmental Law Seminar. Greatly expanded the environmental law curriculum and laid foundation for the concentration program in law. While carrying a full time teaching load, earned a Master of Laws degree in Environmental Law. Established a program for subsequent environmental law professors to obtain an LL.M. prior to joining the faculty.

LITIGATION

Trial Defense Attorney and Prosecutor, U.S. Army Judge Advocate General's Corps, Fort Polk, Louisiana, January 1985–July 1987. Assigned to Trial Defense Service and Office of the Staff Judge Advocate. Prosecuted and defended more than 150 felony-level courts-martial. As prosecutor, served as legal officer for two brigade-sized units (approximately 5,000 soldiers), advising commanders on appropriate judicial, non-judicial, separation, and other actions. Pioneered use of some forms of psychiatric and scientific testimony in administrative and judicial proceedings.

NON-LEGAL MILITARY SERVICE

Armored Cavalry Officer, 2d Squadron 9th Armored Cavalry, Fort Stewart, Georgia, May 1978–August 1981. Served as Logistics Staff Officer (S-4). Managed budget, supplies, fuel, ammunition, and other support for an Armored Cavalry Squadron. Served as Support Platoon Leader for the Squadron (logistical support), and as line Platoon Leader in an Armored Cavalry Troop. Graduate of Airborne and Ranger Schools. Special training in Air Mobilization Planning and Nuclear, Biological and Chemical Warfare.

Karl R. Rábago

Formal Education

LL.M., Environmental Law, Pace University School of Law, 1990: Curriculum designed to provide breadth and depth in study of theoretical and practical aspects of environmental law. Courses included: International and Comparative Environmental Law, Conservation Law, Land Use Law, Seminar in Electric Utility Regulation, Scientific and Technical Issues Affecting Environmental Law, Environmental Regulation of Real Estate, Hazardous Wastes Law. Individual research with Hudson Riverkeeper Fund, Garrison, New York.

LL.M., Military Law, U.S. Army Judge Advocate General's School, 1988: Curriculum designed to prepare Judge Advocates for senior level staff service. Courses included: Administrative Law, Defensive Federal Litigation, Government Information Practices, Advanced Federal Litigation, Federal Tort Claims Act Seminar, Legal Writing and Communications, Comparative International Law.

J.D. with Honors, University of Texas School of Law, 1984: Attended law school under the U.S. Army Funded Legal Education Program, a fully funded scholarship awarded to 25 or fewer officers each year. Served as Editor-in-Chief (1983–84); Articles Editor (1982–83); Member (1982) of the Review of Litigation. Moot Court, Mock Trial, Board of Advocates. Summer internship at Staff Judge Advocate's offices. Prosecuted first cases prior to entering law school.

B.B.A., Business Management, Texas A&M University, 1977: ROTC Scholarship (3–yr). Member: Corps of Cadets, Parson's Mounted Cavalry, Wings & Sabers Scholarship Society, Rudder's Rangers, Town Hall Society, Freshman Honor Society, Alpha Phi Omega service fraternity.

Selected Publications

“Achieving very high PV penetration – The need for an effective electricity remuneration framework and a central role for grid operators,” Richard Perez (corresponding author), *Energy Policy*, Vol. 96, pp. 27-35 (2016).

“The Net Metering Riddle,” *Electricity Policy.com*, April 2016.

“The Clean Power Plan,” *Power Engineering Magazine* (invited editorial), Vol. 119, Issue 12 (Dec. 2, 2015)

“The ‘Sharing Utility:’ Enabling & Rewarding Utility Performance, Service & Value in a Distributed Energy Age,” co-author, 51st State Initiative, Solar Electric Power Association (Feb. 27, 2015)

“Rethinking the Grid: Encouraging Distributed Generation,” *Building Energy Magazine*, Vol. 33, No. 1 Northeast Sustainable Energy Association (Spring 2015)

“The Value of Solar Tariff: Net Metering 2.0,” *The ICER Chronicle*, Ed. 1, p. 46 [International Confederation of Energy Regulators] (December 2013)

“A Regulator’s Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation,” co-author, Interstate Renewable Energy Council (October 2013)

“The ‘Value of Solar’ Rate: Designing an Improved Residential Solar Tariff,” *Solar Industry*, Vol. 6, No. 1 (Feb. 2013)

“A Review of Barriers to Biofuels Market Development in the United States,” *2 Environmental & Energy Law & Policy Journal* 179 (2008)

“A Strategy for Developing Stationary Biodiesel Generation,” *Cumberland Law Review*, Vol. 36, p.461 (2006)

“Evaluating Fuel Cell Performance through Industry Collaboration,” co-author, *Fuel Cell Magazine* (2005)

“Applications of Life Cycle Assessment to NatureWorks™ Polylactide (PLA) Production,” co-author, *Polymer Degradation and Stability* 80, 403-19 (2003)

“An Energy Resource Investment Strategy for the City of San Francisco: Scenario Analysis of Alternative Electric Resource Options,” contributing author, Prepared for the San Francisco Public Utilities Commission, Rocky Mountain Institute (2002)

“Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size,” co-author, Rocky Mountain Institute (2002)

“Socio-Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado,” with Thomas E. Feiler, Colorado Public Utilities Commission and Colorado Electricity Advisory Panel (April 1, 1999)

“Study of Electric Utility Restructuring in Alaska,” with Thomas E. Feiler, Legislative Joint Committee on electric Restructuring and the Alaska Public Utilities Commission (April 1, 1999)

“New Markets and New Opportunities: Competition in the Electric Industry Opens the Way for Renewables and Empowers Customers,” *EEBA Excellence* (Journal of the Energy Efficient Building Association) (Summer 1998)

“Building a Better Future: Why Public Support for Renewable Energy Makes Sense,” *Spectrum: The Journal of State Government* (Spring 1998)

Karl R. Rábago

“The Green-e Program: An Opportunity for Customers,” with Ryan Wisner and Jan Hamrin, *Electricity Journal*, Vol. 11, No. 1 (January/February 1998)

“Being Virtual: Beyond Restructuring and How We Get There,” *Proceedings of the First Symposium on the Virtual Utility*, Klewer Press (1997)

“Information Technology,” *Public Utilities Fortnightly* (March 15, 1996)

“Better Decisions with Better Information: The Promise of GIS,” with James P. Spiers, *Public Utilities Fortnightly* (November 1, 1993)

“The Regulatory Environment for Utility Energy Efficiency Programs,” *Proceedings of the Meeting on the Efficient Use of Electric Energy*, Inter-American Development Bank (May 1993)

“An Alternative Framework for Low-Income Electric Ratepayer Services,” with Danielle Jaussaud and Stephen Benenson, *Proceedings of the Fourth National Conference on Integrated Resource Planning*, National Association of Regulatory Utility Commissioners (September 1992)

“What Comes Out Must Go In: The Federal Non-Regulation of Cooling Water Intakes Under Section 316 of the Clean Water Act,” *Harvard Environmental Law Review*, Vol. 16, p. 429 (1992)

“Least Cost Electricity for Texas,” *State Bar of Texas Environmental Law Journal*, Vol. 22, p. 93 (1992)

“Environmental Costs of Electricity,” *Pace University School of Law, Contributor–Impingement and Entrainment Impacts*, Oceana Publications, Inc. (1990)

ATTACHMENT KRR-2

Table of Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, and through Rábago Energy LLC

(as of 10 March 2017)

Date	Proceeding	Case/Docket #	On Behalf Of:
Dec. 21, 2012	VA Electric & Power Special Solar Power Tariff	Virginia SCC Case # PUE-2012-00064	Southern Environmental Law Center
May 10, 2013	Georgia Power Company 2013 IRP	Georgia PSC Docket # 36498	Georgia Solar Energy Industries Association
Jun. 23, 2013	Louisiana Public Service Commission Re-examination of Net Metering Rules	Louisiana PSC Docket # R-31417	Gulf States Solar Energy Industries Association
Aug. 29, 2013	DTE (Detroit Edison) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U-17302	Environmental Law and Policy Center
Sep. 5, 2013	CE (Consumers Energy) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U-17301	Environmental Law and Policy Center
Sep. 27, 2013	North Carolina Utilities Commission 2012 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 136	North Carolina Sustainable Energy Association
Oct. 18, 2013	Georgia Power Company 2013 Rate Case	Georgia PSC Docket # 36989	Georgia Solar Energy Industries Association
Nov. 4, 2013	PEPCO Rate Case (District of Columbia)	District of Columbia PSC Formal Case # 1103	Grid 2.0 Working Group & Sierra Club of Washington, D.C.
Apr. 24, 2014	Dominion Virginia Electric Power 2013 IRP	Virginia SCC Case # PUE-2013-00088	Environmental Respondents
May 7, 2014	Arizona Corporation Commission Investigation on the Value and Cost of Distributed Generation	Arizona Corporation Commission Docket # E-00000J-14-0023	Rábago Energy LLC (invited presentation and workshop participation)
Jul. 10, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
Jul. 23, 2014	Florida Energy Efficiency and Conservation Act, Goal Setting – FPL, Duke, TECO, Gulf	Florida PSC Docket # 130199-EI, 130200-EI, 130201-EI, 130202-EI	Southern Alliance for Clean Energy
Sep. 19, 2014	Ameren Missouri's Application for Authorization to Suspend Payment of Solar Rebates	Missouri PSC File No. ET-2014-0350, Tariff # YE-2014-0494	Missouri Solar Energy Industries Association
Aug. 6, 2014	Appalachian Power Company 2014 Biennial Rate Review	Virginia SCC Case # PUE-2014-00026	Southern Environmental Law Center (Environmental Respondents)

Table of Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, and through Rábago Energy LLC

(as of 10 March 2017)

Aug. 13, 2014	Wisconsin Public Service Corp. 2014 Rate Application	Wisconsin PSC Docket # 6690-UR-123	RENEW Wisconsin and Environmental Law & Policy Center
Aug. 28, 2014	WE Energies 2014 Rate Application	Wisconsin PSC Docket # 05-UR-107	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 18, 2014	Madison Gas & Electric Company 2014 Rate Application	Wisconsin PSC Docket # 3720-UR-120	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 29, 2014	SOLAR, LLC v. Missouri Public Service Commission	Missouri District Court Case # 14AC-CC00316	SOLAR, LLC
Jan. 28, 2016 (date of CPUC order)	Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs, etc.	California PUC Rulemaking 14-07-002	The Utility Reform Network (TURN)
Mar. 20, 2015	Orange and Rockland Utilities 2015 Rate Application	New York PSC Case # 14-E-0493	Pace Energy and Climate Center
May 22, 2015	DTE Electric Company Rate Application	Michigan PSC Case # U-17767	Michigan Environmental Council, NRDC, Sierra Club, and ELPC
Jul. 20, 2015	Hawaiian Electric Company and NextEra Application for Change of Control	Hawai'i PUC Docket # 2015-0022	Hawai'i Department of Business, Economic Development, and Tourism
Sep. 2, 2015	Wisc. PSCo Rate Application	Wisconsin PSC Case # 6690-UR-124	ELPC
Sep. 15, 2015	Dominion Virginia Electric Power 2015 IRP	VA SCC Case # PUE-2015-00035	Environmental Respondents
Sep. 16, 2015	NYSEG & RGE Rate Cases	New York PSC Cases 15-E-0283, -0285	Pace Energy and Climate Center
Oct. 14, 2015	Florida Power & Light Application for CCPN for Lake Okeechobee Plant	Florida PSC Case 150196-EI	Environmental Confederation of Southwest Florida
Oct. 27, 2015	Appalachian Power Company 2015 IRP	VA SCC Case # PUE-2015-00036	Environmental Respondents
Nov. 23, 2015	Narragansett Electric Power/National Grid Rate Design Application	Rhode Island PUC Docket No. 4568	Wind Energy Development, LLC
Dec. 8, 2015	State of West Virginia, et al., v. U.S. EPA, et al.	U.S. Court of Appeals for the District of Columbia Circuit Case No. 15-1363 and Consolidated Cases	Declaration in Support of Environmental and Public Health Intervenor in Support of Movant Respondent-Intervenors' Responses in Opposition to Motions for Stay

Table of Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, and through Rábago Energy LLC

(as of 10 March 2017)

Dec. 28, 2015	Ohio Power/AEP Affiliate PPA Application	PUC of Ohio Case No. 14-1693-EL-RDR	Environmental Law and Policy Center
Jan. 19, 2016	Ohio Edison Company, Cleveland Electric Illuminating Company, and Toledo Edison Company Application for Electric Security Plan (FirstEnergy Affiliate PPA)	PUC of Ohio Case No. 14-1297-EL-SSO	Environmental Law and Policy Center
Jan. 22, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case	Indiana Utility Regulatory Commission Cause No. 44688	Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case – Settlement Testimony	Indiana Utility Regulatory Commission Cause No. 44688	Joint Intervenors – Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Comments on Pilot Rate Proposals by MidAmerican and Alliant	Iowa Utility Board NOI-2014-0001	Environmental Law and Policy Center
May 27, 2016	Consolidated Edison of New York Rate Case	New York PSC Case No. 16-E-0060	Pace Energy and Climate Center
June 21, 2016	Federal Trade Commission: Workshop on Competition and Consumer Protection Issues in Solar Energy	Invited workshop presentation	Pace Energy and Climate Center
Aug. 17, 2016	Dominion Virginia Electric Power 2016 IRP	VA SCC Case # PUE-2016-00049	Environmental Respondents
Sep. 13, 2016	Appalachian Power Company 2016 IRP	VA SCC Case # PUE-2016-00050	Environmental Respondents
Oct. 27, 2016	Consumers Energy PURPA Compliance Filing	Michigan PSC Case No. U-18090	Environmental Law & Policy Center, “Joint Intervenors”
Oct. 28, 2016	Delmarva, PEPCO (PHI) Utility Transformation Filing – Review of Filing & Utilities of the Future Whitepaper	Maryland PSC Case PC 44	Public Interest Advocates
Dec. 1, 2016	DTE Electric Company PURPA Compliance Filing	Michigan PSC Case No. U-18091	Environmental Law & Policy Center, “Joint Intervenors”
Dec. 16, 2016	Rebuttal of Unutil Testimony in Net Energy Metering Docket	New Hampshire Docket No. DE 16-576	New Hampshire Sustainable Energy Association (“NHSEA”)
Jan. 13, 2017	Gulf Power Company Rate Case	Florida Docket No. 160186-EI	Earthjustice, Southern Alliance for Clean Energy, League of Women Voters-Florida

Table of Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, and through Rábago Energy LLC

(as of 10 March 2017)

Jan. 13, 2017	Alpena Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18089	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Indiana Michigan Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18092	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Northern States Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18093	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Upper Peninsula Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18094	Environmental Law & Policy Center, "Joint Intervenors"
Mar. 10, 2017	Eversource Energy Grid Modernization Plan	Massachusetts DPU Case No. 15-122/15-123	Cape Light Compact
Apr. 27, 2017	Eversource Rate Case & Grid Modernization Investments	Massachusetts DPU Case No. 17-05	Cape Light Compact

ATTACHMENT KRR-3

**See also accompanying
Excel spreadsheet.**

Request No.7-2: Please see Petitioner's Exhibit No. 11 at page 11 (Table RHH-2), page 14 (Table RHH-3), and Attachment RHH-1 at pages 6-10. To the extent not already provided, please provide in electronic, spreadsheet format, with all formulas and links intact, the workbooks that the Company used to forecast these four distinct lost revenue projections (i.e, through the measure life, with a 4 year cap, with a 9 year cap, with a 9 year cap + 10% savings reduction) for the 2016-2017 plan broken down by year. If possible, please do not include legacy lost revenues in these workbooks. To avoid any confusion and for your convenience, please see Attachment 1 for a similar year by year projection of lost revenue collection proposed by Duke Energy Indiana for its 2015 plan in Cause No. 43955 DSM 2, which is a public document.

Response: Please see the file labeled Exhibit CAC DR 7-2 (Lost Revenue Projections), which includes all exhibits in electronic spreadsheet format that were made in electronic spreadsheet format.

ATTACHMENT KRR-4

Request No.7-10: Please see Petitioner's Exhibit 12 at page 3, lines 17-19.

- a. Did the Vectren Oversight Board ever receive notice that Cadmus would be filing testimony in this Cause? If anything but an unqualified "no," please explain in detail.
- b. Did the Vectren Oversight Board ever vote on whether Cadmus should file testimony in this Cause? If anything but an unqualified "no," please explain in detail.
- c. Did the Vectren Oversight Board ever receive notice that Cadmus would be filing testimony in this Cause supporting Vectren's lost revenue recovery proposals? If anything but an unqualified "no," please explain in detail.
- d. Did the Vectren Oversight Board ever vote on whether Cadmus should file testimony in this Cause supporting Vectren's lost revenue recovery proposals? If anything but an unqualified "no," please explain in detail.

Objection: Vectren South objects to this request on the grounds and to the extent that such request is irrelevant and is not reasonably calculated to lead to the discovery of admissible evidence.

Response: Notwithstanding the general and specific objections set forth above, neither notice to nor approval of the Vectren Oversight Board were required for Vectren South to retain Cadmus to sponsor testimony in this proceeding.

Request No.7-11: Please see Petitioner's Exhibit 12. Please provide documents reflecting communications (especially but not exclusively meeting minutes, documents reflecting meetings, or correspondence, including any attachments) on or after March 7, 2017, between Vectren, its employees or agents, and Cadmus, its employees or agents relating to (1) planning for and in preparation of the filings made by the Company in this proceeding, or (2) the calculation and determination of verified energy savings attributable to the Company's DSM programs.

Objection: Vectren South objects to this request on the grounds and to the extent that information pertinent to the discovery request either does not currently exist or, if it does exist, it was prepared at the special request of Vectren South's counsel, in anticipation of litigation. Vectren South objects to the request to the extent that it seeks the discovery of the mental impressions or legal theories of Vectren South's counsel, or attorney work product prepared in anticipation of litigation.