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MISSOURI PUBLIC SERVICE COMMISSION

EO-2019-0132 / EO-2019-0133

REBUTTAL TESTIMONY

OF

JAMES OWEN

ON BEHALF OF

RENEW MISSOURI ADVOCATES

January 28, 2019

Renew MO Exhibit No. 451
Date 9-23-19 Reporter TU
File No. EO-2019-0132
EO-2019-0133

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	))))	File No. EO-2019-0132
In the Matter of KCP&L Greater Missouri Operations Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	))))	File No. EO-2019-0133

AFFIDAVIT OF JAMES OWEN

STATE OF MISSOURI)
) ss
COUNTY OF BOONE)

COMES NOW James Owen, and on his oath states that he is of sound mind and lawful age; that he prepared the attached rebuttal testimony; and that the same is true and correct to the best of his knowledge and belief.

Further the Affiant sayeth not.

James Owen

Subscribed and sworn before me this 28th day of January 2019.

Notary Public

MATTHEW PATTERSON
Notary Public, Notary Seal
State of Missouri
Boone County
Commission # 11274306
My Commission Expires 01-19-2020

My commission expires: 1-19-20

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1 I. **Introduction**

2 Q: **Please state your name, title, and business address.**

3 A: James Owen, Executive Director, Renew Missouri Advocates d/b/a Renew Missouri
4 ("Renew Missouri"), 409 Vandiver Dr. Building 5, Suite 205, Columbia, MO 65202.

5 Q: **Please describe your education and background.**

6 A: I obtained a law degree from the University of Kansas as well as a Bachelor of Arts in
7 Business and Political Science from Drury University in Springfield.

8 Q: **Please summarize your professional experience in the field of utility regulation.**

9 A: Before becoming Executive Director of Renew Missouri, I served as Missouri's Public
10 Counsel, a position charged with representing the public in all matters involving utility
11 companies regulated by the State. While I was Public Counsel, I was involved in several
12 rate cases, CCN applications, mergers, and complaints as well as other filings. As Public
13 Counsel, I was also involved in answering legislators' inquiries on legislation regarding
14 legislation impacting the regulation of public utilities. In my role as Executive Director at
15 Renew Missouri, I continue to provide information and testimony on pieces of proposed
16 legislation that may impact how Missouri approaches energy efficiency and renewable
17 energy.

18 Q: **Have you been a member of, or participant in, any workgroups, committees, or**
19 **other groups that have addressed electric utility regulation and policy issues?**

20 A: In May 2016 I attended the National Association of Regulatory Utility Commissioners
21 ("NARUC") Utility Rate School. In the Fall of 2016, I attended Financial Research
22 Institute's 2016 Public Utility Symposium on safety, affordability, and reliability. While I
23 was Public Counsel, I was also a member of the National Association of State Utility

1 Consumer Advocates ("NASUCA") and, in November of 2017, the Consumer Council of
2 Missouri named me the 2017 Consumer Advocate of the Year.

3 **Q: Have you testified previously, participated in cases, or offered testimony before the**
4 **Missouri Public Service Commission ("Commission")?**

5 A: In my prior role as Acting Public Counsel I participated in a number of PSC cases as an
6 attorney and director of the office. During that time period I also offered testimony in
7 rulemaking hearings before the Commission. Since becoming Executive Director of
8 Renew Missouri I contributed to Renew Missouri's filed testimony in a number of matters.
9 Attached as **Schedule JO-1** is a list of my case participation.

10 **II. Purpose and summary of testimony**

11 **Q: What is the purpose of your testimony?**

12 A: To offer rebuttal testimony regarding the Pay As You Save ("PAYS®") Feasibility Study
13 submitted as Attachment 8.9 ("Feasibility Study") by Kansas City Power & Light
14 ("KCPL") and KCPL's Greater Missouri Operation ("GMO")[1] in their individual
15 "Submission Summaries" for their Application for Authority to Establish a Demand-
16 Side Programs Investment Mechanism ("DSIM") under the Missouri Energy Efficiency
17 Investment Act ("MEEIA").

18 **Q: Something seems off here. Isn't rebuttal testimony, by nature, in a format where it**
19 **is rebutting direct testimony?**

20 A: Usually that is correct, yes. However, on November 29th of 2018, KCPL and GMO filed a
21 Joint Application to Approve DSIM Filing, Request for Variances, and Motion to Adopt
22 Procedural Schedule" and indicated submitted reports were "...the equivalent of
23 testimony...from the Company's subject matter experts in support of this MEEIA filing."

[1] GMO's case number in this matter is EO-2019-0132 and KCPL's case number in this matter is EO-2019-0133. Their Notice of Intent of Filing with the Submission Summary was filed on November 6th of 2018

1 After an Agreement to Amend this Procedural Schedule was submitted by the Companies
2 and the Office of Public Counsel ("OPC"), the Public Service Commission
3 ("Commission") approved of these variances on December 27th of 2018. In this same
4 Order, Renew Missouri Advocates ("Renew Missouri"), for which I am employed, was
5 also granted intervention without objection from any party.

6 **Q: Thank you. What is Renew Missouri's interest in this application?**

7 A: Renew Missouri advocates for energy efficiency and renewable energy policy. As a state-
8 wide advocate, Renew Missouri has an interest in KCPL and GMO offering robust energy
9 efficiency programs to their customers consistent with the legislative intent of MEEIA.
10 Renew Missouri supports these Companies' filings but also strives to make them even
11 stronger in terms of serving all customers of all classes as the MEEIA statutes dictate.

12 **Q: What is your recommendation to the Commission in this case?**

13 A: The Commission should grant KCPL and GMO's applications with an order that requires
14 Companies' to develop a tariff to facilitate a PAYS® program for their customers.
15 Specifically, for homeowners without access to credit, renters, small businesses, and
16 smaller governmental entities. It is Renew Missouri's assertion that PAYS®, if developed
17 properly with proper marketing efforts, will greatly enhance participation in the
18 Companies' energy efficiency efforts, provide greater earnings opportunity for the
19 Companies, provide benefits for customers who often don't see results from these MEEIA
20 Applications, and help to resolve the kind of concerns raised by Commission Staff ("Staff")
21 in other cases that these proposed plans satisfy the requirements of the MEEIA statute.

22 **III. <u>The PAYS® System</u>**

23 **Q: Please summarize the PAYS® concept.**

1 A: We can start by looking at how PAYS® is described in the Feasibility Study submitted as

2 a part of these applications. So, first, a note about that. This Study was conducted by

3 Cadmus – a consulting firm out of Waltham, Massachusetts – that was retained by the

4 Companies to look at PAYS® in response to an Order by the Commission.

5 **Q: I will ask you more about that in a minute. How does the Feasibility Study describe**

6 **PAYS?**

7 A: Sure. On Pages 9-10 of the Feasibility Study, it described PAYS® as:

> ...a trademarked program model used in a number of energy efficiency programs around the country. PAYS typically includes the following key characteristics:
>
> • A tariff or charge on a utility bill that recoups the financed amount over time. The tariff is applied to the meter where the measure is installed, rather than the customer.
> • Disconnection for non-payment of the utility bill.
> • A statement of estimated average bill savings that exceed PAYS payments (on an annual basis).
> • No minimum credit requirement.
>
> Most PAYS programs allow for some customer co-payment if the amount the utility can finance, according to the PAYS formula, does not cover the full cost of the measure. The tariff is based on the amount financed, rather than on the full measure cost.
>
> PAYS offers several advantages. The program's model requires that amounts financed are less than the utility bill savings, which automatically limits eligible measures to those that save energy and provides a value proposition to customers. PAYS' co-payment feature allows a wider array of energy-saving measures to qualify than only those measures that provide enough savings to support the full measure cost. In addition, as a financing program that recoups money given to individuals, plus interest, PAYS has the potential to be less costly than a rebate program.
>
> The program offers another significant advantage: its potential to penetrate segments of the customer base that can be hard to reach through other rebate or financing-type programs. The program can penetrate rental housing due to its tariff structure, which allows renters to make payments only while they enjoy benefits from the upgrade, with no further obligation if they leave the property.
>
> In addition, the proactive delivery model used with most PAYS programs involves concentrated outreach to customers with high energy use (or other

indicators of high-energy savings opportunities), providing them with a customized audit and upgrade plan, and, consequently, often replacing working but inefficient equipment.

1 **Q: Has the Commission ever offered a description of PAYS®?**

2 A: Yes. In KCPL's prior general rate case, the Commission wrote of PAYS® in its Report
3 and Order as follows: "(It) is a market-based system that enables utility customers to
4 purchase and install cost-effective energy efficiency upgrades or distributed renewable
5 energy assets through a voluntary program that assures immediate net savings to customers.
6 The idea behind PAYS® is for energy-saving upgrades to be installed in a customer's home
7 or building, but the utility pays the up-front cost of the installed energy saving measures.
8 To recover its costs, the utility puts a fixed charge on the customer's electric bill that is
9 significantly less than the estimated energy savings from the upgrades. Therefore, the
10 customer sees immediate savings by incurring less expense for energy while paying a fixed
11 charge that is below the total estimated energy savings. Once the utility recovers its costs,
12 the obligation of the customer to pay ends."[2] In the same docket, the Commission ordered
13 KCPL to consider incorporating PAYS® programs in its next MEEIA filing.[3]

14 **Q: If you were to summarize this for an elevator pitch, how would you do so?**

15 A: PAYS® allows customers to make efficiency improvements to their home with money
16 from the utility company. The customer pays back the amount spent – with interest – to the
17 utility company. But this does not follow the utility customer to another address; it stays at
18 the same meter. So any future customer pays for the benefit and savings they get to enjoy.
19 I also know visualization is helpful and here's a demonstrative representation of PAYS®:

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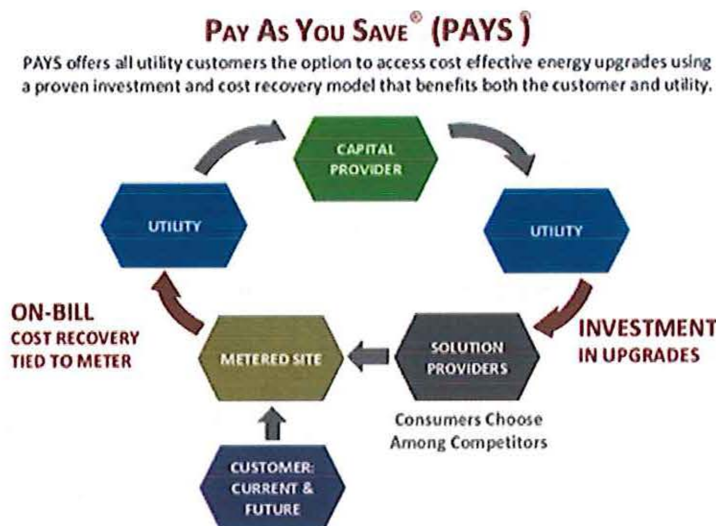
[2] Report and Order, p. 13, Case No. ER-2016-0285 dated May 3rd of 2017.
[3] *Id* at 14.



1 **Q: Isn't this the same things as on-bill financing?**

2 A: No, and the Feasibility Study explains that as well. On-bill financing is a loan from the
3 utility or utility agent to a customer. Already this is different because PAYS® is tied to the
4 meter, not the customer. Often, on-bill financing is tied to credit history; also different than
5 PAYS®. Ultimately, the big distinction from on-bill financing is that PAYS® is defined
6 by a tariff.

7 **Q: How is this different than PACE?**

8 A: The Property Assessed Clean Energy ("PACE") districts – which are political subdivisions
9 created by statute - offers customers financing for energy efficiency through regional
10 PACE boards and then the payments are assessed annually by the County Collector. This
11 is not like traditional financing but there still is an outside entity maintaining this as
12 opposed to PAYS® where the funding comes from the utility. Plus, PACE financing is still
13 contingent on credit history. Further, PACE districts must be established by local
14 governments and only select areas in Missouri have PACE financing. So not every
15 customer in the KCPL and GMO service territories even has access to PACE financing.

1 **Q: Does Cadmus address any downsides they see with PAYS®?**

2 A: Yes. On Page 10, Cadmus outlines drawbacks on a "PAYS® tariff" that includes its
3 perceived ability to only fund "a few extremely high saving measures," that it can "result
4 in financing amounts trivial relative to the measures overall costs", and a concern that
5 "program administrators must account for long-term implications."

6 **Q: What is your response to those drawbacks?**

7 A: It is not as though these "drawbacks" are unique to a "PAYS® tariff." Every tariff
8 developed and approved by this Commission – particularly those that would enact any kind
9 of energy efficiency program – should be aware of these concerns. They are not unique to
10 PAYS® and Renew Missouri would expect any tariff submitted for approval to the
11 Commission would be developed with optimal benefits in mind. Ultimately, any program
12 approved by this Commission should consider all short-term and long-term effects when
13 reviewing and approving of a tariff. These sound like general concerns that don't
14 specifically address PAYS®.

15 Crucially, OPC sought analysis by Energy Efficiency Institute, Inc. ("EEI") – the
16 proprietary holder of the PAYS® concept and considered foremost experts on the program
17 – and this was reduced to a Memorandum that addressed these conclusions as well as other
18 concerns with the Feasibility Study.[4] This was filed by OPC as a part of this case. This
19 response was authored by EEI's Harlan Lachman and Paul Cillo, both of whom have filed
20 Non-Disclosure Agreements in this matter and who are prepared to testify to this response.
21 I submit that response as part of my testimony and it is attached as **Schedule JO-2.**

[4] Doc. No. 29.

1 **Q: Does the Feasibility Study make any conclusions and recommendations?**

2 A: Yes. To summarize, Cadmus offers four conclusions: (1) Opportunity exists for a utility-
3 sponsored financing program to fill a gap in the financing market and increase residential
4 uptake of energy efficiency improvements; (2) Information barriers exist due to the
5 program's complexity; and (3) the Companies' customer base appears to include a large
6 number of homes that would benefit; (4) Regulatory approval for appropriate credit
7 enhancements would be required. Again, the response filed by OPC has very good
8 commentary from EEI on some of these conclusions.

9 Regardless, based on these conclusions, Cadmus recommends the Companies
10 consider a PAYS ® program (or something similar) targeted to specific market segments
11 and to address the primary barriers identified in the report as well as designing credit
12 enhancements that satisfy regulators and attract investors.

13 **IV. PAYS® and MEEIA**

14 **Q: You mentioned earlier that the Companies were ordered by the Commission to**
15 **conduct this Feasibility Study. Why was that?**

16 **A:** In its "Report and Order" from a previous rate case (ER-2016-0285) for KCPL dated May
17 3rd of 2017, the Commission directed KCPL to consider incorporating PAYS® into a
18 MEEIA demand-side management program. The issues of PAYS® was a part of the
19 contested matters heard by the Commission in that earlier rate cases and this was the
20 ultimate direction the Companies were given. In short, it is an issue here because the
21 Commission said it should be.

22 **Q: How did this originate as an issue in that case?**

23 A: According to the same "Report and Order", GMO had expressed desire for
24 consistency in facility extension tariff provisions in File No. 2016-0156 and, as a result of

1 this desire, Staff recommended both Companies "modify their tariff provisions to more
2 fully consider the incremental costs a customer causes to a system in determining how
3 much, if any, customer advance is required." That same "Report and Order" noted, this
4 was also similar with discussions in the Staff Report found in File No. EW-2016-0041.
5 This file was a working docket on the topic of "Mechanisms to Encourage Infrastructure
6 Efficiency." According to the Staff report filed on December 11th of 2015, one of the
7 primary policy considerations of this workshop was to evaluate "the ability of residential
8 customers of all income levels to have affordable access to electrical services." [5]

9 **Q: It is your belief that this policy discussion on extension service led to a broader**
10 **conversation about affordable costs that included PAYS®**

11 A: Based on reading these Commission Orders and Staff Reports, that is my belief.

12 **Q: How is the issue of extending service to customers and affordable costs related to**
13 **MEEIA?**

14 A: According to Section 393.1040 of the Revised Missouri Statutes, it is "the policy of this
15 state to encourage electrical corporations to develop and administer energy efficiency
16 initiatives that reduce the annual growth in energy consumption and the need to build
17 additional electric generation capacity." When we are talking about how to minimize the
18 cost of providing services to all customers, working on ways of reducing the amount of
19 electricity used is also crucial and why a program like PAYS® can be used to address it.

20 **Q: Specifically, can PAYS® be considered a "demand-side program"?**

---

[5] The Staff further goes on to note when it comes to seeking new electric customers: "an extension policy that holds the monthly bills of existing ratepayers harmless to increased rates resulting from the addition of a new customer is the most desirable policy from a purely cost basis. However, as with all rate design matters, other factors such as bill impacts, simplicity, rate stability, fairness among different consumers, customer understandability, meeting incremental costs, and public policy considerations should also be evaluated."

1 A: Yes. Per Subsection three of Paragraph two of Section 393.1075 RSMo., a "demand-side program" is "any program conducted by the utility to modify the net consumption of electricity on the retail customer's side of the electric meter, including but not limited to energy efficiency measures, rate management, demand response, and interruptible or curtailable load."

6 However, even if PAYS® is not considered a "demand-side program," it can still be approved as part of a marketing or customer acquisition budget. The primary goal of PAYS®, or any on-bill financing arrangement, is to overcome the upfront cost of energy efficiency measures in order to increase customer participation in other demand-side programs.

11 **Q: Why do you believe a PAYS® program should be approved as a part of this application?**

13 First and foremost, this is a topic that has been discussed in filings over the past four years. The Commission clearly has an interest in PAYS® and they see it as a potentially viable program for Missouri utilities – otherwise it would not have directed KCPL, Ameren Missouri, and Empire to examine the feasibility. Secondly, we believe the Feasibility Study shows how PAYS® can address a concern brought up by Staff as most recently as Ameren Missouri's MEEIA Cycle III Application.[6]

19 **Q: What was the primary concern raised by Staff?**

20 A: They viewed Ameren Missouri's application as far-reaching and aggressive. Its initial application was very different than what Missouri had seen before. Renew Missouri saw this as a good thing; bold and robust programs with a budget to match. But our mission is

[6] *See* File No. EO-2018-0211

1 to support energy efficiency. Staff raised concerns that MEEIA applications in general, let
2 alone the ambitious scope of the application, did not follow the statute.

3 **Q: Specifically, what portion of the statute raises concerns for Staff?**

4 A: In many instances where an investor-owned utility has sought an energy efficiency
5 application under MEEIA, not just in Ameren's last case, Staff has pointed to Paragraph
6 Four of Section 393.1075 RSMo that states: "Recovery for such (demand-side) programs
7 shall not be permitted unless the programs are approved by the commission, result in
8 energy or demand savings and are beneficial to all customers in the customer class in
9 which the programs are proposed, regardless of whether the programs are utilized by
10 all customers."

11 **Q: Where did Staff raise this concern in the Ameren Cycle III case?**

12 A: Generally, it was offered through an overview by Staff Director Natelle Dietrich who
13 referenced the Staff's Report on Ameren Missouri's Demand-Side Application as well as
14 the testimony of other Staff witnesses who submitted testimony to the Commission.[7]

15 **Q: Do you agree with this concern?**

16 No. But we also understand that Staff has a different mission than Renew Missouri and we
17 hope to address all concerns by all parties in reaching a final disposition of these matters.

18 **Q: It is your testimony PAYS® would address this concern?**

19 A: Yes. In the Feasibility Study submitted with the Companies' applications, one of the
20 enumerated benefits of PAYS® includes the benefits to homeowners and renters who
21 do not qualify or have difficulty in obtaining traditional loans or being approved for more
22 traditional forms of on-bill financing.

[7] File No. EO-2018-0211, Doc. No. 28.

1 **Q: Why is this important?**

2 Section 393.1075 RSMo. specifically states that any low-income demand-side program
3 does not have to benefit all customers in all classes. In fact, there are parties in this case
4 that are specifically advocating for those programs for which Renew Missouri is precisely
5 aligned. Moreover, some residential customers and smaller businesses are able to obtain
6 benefits from their utility that help offset the costs of energy efficiency improvements, such
7 as rebates, through means such as on-bill financing, traditional financing, or PACE.

8 Why PAYS® is important is due to the fact that it can specifically target residential
9 customers and renters who cannot afford those energy efficiency programs or do not
10 qualify for demand-side programs usually reserved for low-income residents or large-scale
11 customers. PAYS®, as considered as a part of these other programs already being offered
12 by the Companies, allows for a demand-side portfolio that indeed provides benefits for all
13 customers of all classes. PAYS ® helps to resolve that concern raised by Staff.

14 **V. Benefits of PAYS®**

15 **Q: We've spent some time on why this should satisfy Staff members concerned about**
16 **statutory compliance? But what about benefits to the parties for which the**
17 **Commission is supposed to balance – the utilities and the public?**

18 Certainly. Renew Missouri is relying on the testimony of Mr. Mark Cayce, the President
19 of the Ouachita Electric Cooperative in Arkansas, to discuss more fully the benefits his
20 cooperative has seen in regards to their payback as well as the benefits to the service
21 territory.[8]

22 Generally speaking, PAYS ® will provide utilities with a new model to encourage
23 energy efficiency and a new income flow through interest. With energy use being curtailed,

[8] It is important to note that rural electric cooperatives in Arkansas are regulated in the same way investor-owned utilities are regulated in Missouri.

1 there is less of a need for the utilities to spend money to fund capital projects to deliver
2 power. This promises to address the concerns brought forward by GMO in their last rate
3 case, ER-2016-0156, as discussed previously in this testimony. This is in addition to
4 earning potential that is discussed further in other portions of this testimony. Further, the
5 utility can still disconnect service if customers do not pay on this billing. In regards to the
6 public, Renew Missouri believes there is a strong benefit to them as well. This is precisely
7 why Renew Missouri is working closely with the OPC on this matter - PAYS® is a program
8 that both consumer advocates and efficiency advocates can agree.
9 First, this program allows customers to make substantial improvements to their
10 home, their business, their smaller institutional buildings, or their municipal buildings and
11 enjoy the benefits of a lower electric bill as well as a healthier place to live and work.
12 Secondly, this allows customers to obtain the resources to make these improvements
13 without dealing with financial institutions or burdening them with excessive paperwork.
14 There are no credit checks or additional monthly payments – other than the monthly
15 payment they are already making to pay their electric bill. The simplicity of PAYS® is a
16 real plus to smaller customers who might be put off by a complicated process. Finally, the
17 PAYS® program is designed for customers to see a net cash benefit from participating.
18 While this cannot be guaranteed, the purpose is for customers to see their usage go down
19 through energy efficiency measures to the point that, even with owing the utility company
20 money every month for these improvements, their bills will be lower.
21 **Q: Does this conclude your testimony?**
22 A: Yes.

CASE PARTICIPATION OF
JAMES OWEN

Date	Proceeding	Docket No.	On Behalf of:	Issues
10/20/2017	In the Matter of a Working Case to Explore Emerging Issues in Utility Regulation	EW-2017-0245	Renew Missouri Advocates	**Comments:** Distributed Energy Resources
2/7/2018	In the Matter of the Application of The Empire District Electric Company for Approval of Its Customer Savings Plan	EO-2018-0092	Renew Missouri Advocates	**Rebuttal**: Customer savings plan, wind generation, Asbury retirement, federal tax changes
Rebuttal 7/27/2018 Surrebuttal (9/4/2018)	In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145/ER-2018-0146	Renew Missouri Advocates	**Rebuttal:** Demand Response Program **Surrebuttal:** Demand Response Program
6/8/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren	ET-2018-0063	Renew Missouri Advocates	**Surrebuttal:** Eligibility parameters, wind generation

	Missouri for Approval of 2017 Green Tariff			
9/17/2018	In the Matter of Union Electric Company d/b/a Ameren Missouri's 3rd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	EO-2018-0211	Renew Missouri Advocates	**Surrebuttal:** Statutory Requirements of MEEIA
9/28/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202	Renew Missouri Advocates	**Surrebuttal:** Second Non-unanimous Stipulation and Agreement; Need for the project; Conservation conditions
11/16/2018	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132	Renew Missouri Advocates	**Surrebuttal:** Charge Ahead Programs

1/15/2019	In the Matter of a Workshop Docket to Explore the Ratemaking Process	AW-2019-0127	Renew Missouri Advocates	**Comments:** Ratemaking Process
1/22/2019	In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2019-0021	Renew Missouri Advocates	**Surrebuttal:** Conservation conditions; Tax revenue; Benefits of wind generation

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	))))	File No. EO-2019-0132
In the Matter of KCP&L Greater Missouri Operations Company's Notice of Intent to File an Application for Authority to Establish a Demand-Side Programs Investment Mechanism	))))	File No. EO-2019-0133

RESPONSE TO PAY AS YOU SAVE (PAYS) FEASIBILITY STUDY

COMES NOW, the Office of the Public Counsel (OPC), by and through counsel, to submit this Response to Pay as You Save (PAYS) Feasibility Study and state as follows:

1. In its Report and Order from a prior general rate case for Kansas City Power & Light (KCPL) and KCP&L – Greater Missouri Operations (GMO), the Public Service Commission (Commission) ordered the companies to consider incorporating PAYS into a Missouri Energy Efficiency and Investment Act demand-side management program.[1]

2. KCPL and GMO contracted with the Cadmus Group LLC to complete a feasibility study.

3. Cadmus Group completed the study on September 28, 2018, and found that a PAYS program could support KCPL and GMO customers without other means of accessing capital, but that KCPL and GMO must address implementation barriers to realize the PAYS' full potential. Cadmus Group recommended that KCPL and GMO consider a PAYS program that targets low-

[1] *Report and Order*, File No. ER-2016-0285 (May 3, 2017).

income and multifamily populations. KCPL and GMO submitted the study alongside their latest application for a demand-side management program.

4. In response to KCPL and GMO's feasibility study, the Energy Efficiency Institute, Inc. (EEI), the proprietary owner of PAYS, reached out to the OPC with concerns regarding Cadmus Group's methodology.

5. The EEI provided the OPC with documentation of its concerns, and the OPC attaches said document hereto as **OPC-1**.

WHEREFORE, the OPC respectfully submits this Response to PAYS Feasibility Study and tenders **OPC-1** for the Commission's future consideration regarding the PAYS program. The OPC does not request any particular action of the Commission at this time.

Respectfully,

OFFICE OF THE PUBLIC COUNSEL

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Attorney for the Office of the Public Counsel

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served, either electronically or by hand delivery or by First Class United States Mail, postage prepaid, on this 8th day of January, 2019, with notice of the same being sent to all counsel of record.

/s/ Caleb Hall

Response to

PAYS[1] Feasibility Study prepared for Kansas City Power & Light by Cadmus

prepared by the Energy Efficiency Institute, Inc.
for Missouri Office of the Public Counsel

Given recent interest in the Pay As You Save® (PAYS®) system in Missouri, it is vital that decision makers assess whether PAYS should be implemented in Missouri based on accurate information about how PAYS works and experiences in other states.

The Energy Efficiency Institute, Inc. (EEI) is not only the originator of the Pay As You Save system, it has also been involved to varying degrees in the regulatory approval, design, and implementation of all 17 programs in the seven states where the PAYS system has been implemented.

EEI reviewed the Cadmus "PAYS Feasibility Study" (sic) prepared for Kansas City Power and Light (KCP&L), which was delivered September 28, 2018.

The Cadmus report is based on a survey of KCP&L residential customers intended to assess "*...whether the Pay As You Save (PAYS) program model could contribute to increased energy efficiency uptake among KCP&L residential customers, and whether offering the program would be administratively feasible for KCP&L.*" (p. 1)

Generally, the report's conclusions and recommendations are positive about the appropriateness of PAYS for KCP&L residential customers. The report notes, for example, that "*...potentially a reasonably large subset of homes in KCP&L territory that could provide significant savings opportunity and be good candidates for PAYS.*" (p. 3) And Cadmus acknowledges the unique aspects of the PAYS offer to customers on page 17 when it writes, "*PAYS incorporates several unique features that most people are not accustomed to considering when thinking about payment or financing options.*"

At the same time, this report evidences a troubling misunderstanding of PAYS and unfortunately that can leave readers (including KCP&L decision makers) confused about what PAYS is, how it works, and the attractiveness of the offer to customers. And that misunderstanding has not only impacted the survey and its results, it undermines the report's positive conclusions and

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[1] The report title should include the registered trademark symbol. In 2003 (PAYS®) and 2005 (Pay As You Save®), the U.S. Trademark and Patent Office awarded EEI trademarks for its system and its acronym. As of those dates, there is no PAYS-like program or a generic Pay As You Save program. Using the name or its acronym must refer to EEI's system (i.e., has all the essential elements and meets all the minimum program requirements) and should be accompanied by the registration mark. It must also be used when utilities receive permission to use PAYS as part of their branding. EEI has never charged a program for using the mark. EEI has asked numerous persons with relationships with Cadmus (e.g., Dr. Holmes Hummel at Clean Energy Works and Jennifer Greene the City of Burlington Vermont's Sustainability Office) to point out that PAYS is a trademarked system and U.S. Patent and Trade Mark law requires the use of the registered mark symbol. Cadmus acknowledges on page 5: "*PAYS is a trademarked program model used in a number of energy efficiency programs around the country,*" however, they do not use the registered trademark symbol in the report as required by U.S. Patent and Trademark law.

recommendations. We are especially concerned because this study repeats many of the same errors that EEI found in the studies Cadmus published earlier this year for Empire District and Ameren Missouri.[2]

We have cited excerpts from this study and provided clarifications that we think are necessary as well as recommendations that we think would help KCP&L meet its operational goals for efficiency programs through implementing a successful and cost effective PAYS program that serves all customers including renters and low- moderate- income and other hard-to-reach customers. As we did with our response to Cadmus' report for Empire District, we have also included in this response an addendum listing examples of misinformation in the Cadmus report for KCP&L that should be corrected.

We have organized this response into five sections plus an addendum: 1. PAYS background and key distinctions; 2. Unrealistically high cost estimates; 3. Low penetration targets and few eligible measures; 4. Survey flaws; and 5. Recommendations.

1. PAYS® background and key distinctions

The PAYS system was developed in the mid-1990s. Rebates, low- or no-interest loans, and on-bill financing were used as incentives to customers to purchase and install energy efficiency measures in their homes and businesses. But none of these efforts produced robust customer acceptance.

EEI's assessment was that these incentives failed to produce widespread building energy efficiency because they were not focused on customers, the people who make the decisions about whether or not to install building upgrades. In fact, these programs required participants to accept most of the risk that the purchase might not deliver as promised (e.g., problems with contractors, insufficient savings to justify the cost, upgrade failure, shoddy products or installations, leaving premises before upgrades repaid their cost through savings, unaffordability that excluded participation of more than half of utilities' customers, that is, renters and low- moderate- income customers). As a result, the customer take-up rates for most utility programs have been very low.

While the PAYS system includes elements of rebate and loan programs, it takes a different approach to achieving widespread building energy efficiency: making an offer to customers that is too good to refuse. Because PAYS is focused on the offer to the customer, it is often misunderstood or mischaracterized by analysts used to thinking about programs using rebates or financing incentives, which also appears to be the case with Cadmus.

In this section of the response, we look at some key distinctions between PAYS and other types of programs and how misunderstanding these distinctions has led Cadmus to erroneous conclusions in its report for KCP&L that put PAYS in an unrealistically negative light.

<u>Utility investment, not consumer loans:</u>
PAYS involves no consumer purchases or loans. The participating utility customer does not take on new debt, and therefore, there is no need to go through a credit check. In the PAYS system, the

[2] Missouri Office of Public Counsel. 2018. Response to Notice of Completion of PAYS Study. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=ER-2016-0023&attach_id=2018021923. EEI communicated to the Missouri Office of the Public Counsel that there was no need to respond to Cadmus' feasibility study for Ameren because it cited similar costs and faulty conclusions as its Empire study.

utility places no lender lien on the property, and there is no loan balance to be paid off by when a utility customer vacates the premises. In short, customers are not borrowers under PAYS programs.

Instead, PAYS involves utilities investing in upgrades on the customer side of the meter and then collecting payments through a tariff to recover their investments from customer(s) at the locations where the upgrades were installed. If any money needs to be borrowed, it is borrowed by the utility. And payment obligations are tied to the location, so whoever is a customer at a location where upgrades are installed makes the payments for only as long as they are a customer there.

Cadmus represents PAYS as a consumer financing program throughout this study, introducing confusion with loan programs. For example, immediately following the Executive Summary on page 1, the report states: "*...the study examined whether any on-bill financing program would be a beneficial addition to KCP&L's residential energy efficiency portfolio...*". Financing in this context typically means a consumer loan that includes debt on the participant's balance sheet as the borrower, a lien placed on the property by the lender, and the need for the participant to pay off the loan when they vacate the premises. Since PAYS is not a consumer loan, it includes none of those barriers to customer participation; it is a very different kind of offer to the customer. At best, the report is ambiguous about whether on-bill financing involves a loan to the participant.

In the scenarios that Cadmus uses to describe PAYS to survey participants, it describes it as a consumer loan. In scenario two on page 18 (and in scenario three on page 19), for example, the report states: "*You would repay the loan as an extra $40 charge each month on your electric bill ($480 per year) for about 14 years.*" It's no surprise that the percentage of respondents who selected rebate and financing options was lower (54%) than the percentage selecting rebates only (84%). We know that customers do not want to take on more debt. That's one of the barriers to participation that PAYS was designed to eliminate. Customers incur no new debt with PAYS upgrades.

In fact, none of the four scenarios (pp. 17-21) describe PAYS. Many of the survey questions do not address information that might be helpful to any Missouri utility considering implementing a PAYS program. The KCP&L customers in the sample surveyed by Cadmus are asked to comment on differences that are never clearly or fully explained to them in Cadmus' questions. Findings related to non-PAYS on-bill finance programs have no relevance to well-designed PAYS programs in terms of operations costs, upgrade costs, installation costs, and offer acceptance rates. It is a mistake to use such information to inform conclusions about the viability of PAYS at KCP&L.

PAYS® is a system:

In the Willingness to Accept PAYS Features section (pp. 17- 21), Cadmus examines customer interest in individual features of the PAYS system, such as "...th*e 'tied to the meter' tariff aspect, the guaranteed positive cash flow and the utility endorsement.*"

A significant problem in this section is that it leaves out other features that, in concert with the cited features, combine to create an offer that works. PAYS works as a system with each element of the system designed to help create an offer that customers find too good to refuse. The offer is not effective unless all of the features are included. Cadmus should have asked the KCP&L customers in the sample about the desirability of a PAYS offer with all of its customer benefits.

The first scenario in this section of the study by Cadmus for KCP&L has nothing to do with PAYS features. Cadmus writes, "The first scenario presented a rebate-only option... The majority of

respondents (84%) selected the rebate option, as shown in Figure 9." Rebates are not a requirement of PAYS though many utilities have continued their rebates when implementing PAYS.

Rebates were originally designed to provide the least possible subsidy to get customers to purchase items they would not otherwise purchase that would benefit the utility and all of its customers. EEI is not familiar with and cannot comment on the efficacy of KCP&L's rebate programs. However, since more than half of all customers receiving a PAYS offer accepted it (80% in neighboring Arkansas' HELP PAYS® program and more than 70% in Kansas' Midwest Energy's How$mart® program), implementing a PAYS program would provide utilities the opportunity to reevaluate the amount of the rebates required to get customers to purchase efficiency upgrades.

Without any justification, on page 47, Cadmus writes, "*Due to its strict requirements for eligible projects, PAYS will prove unattractive to customers with access to other financing options.*" As noted elsewhere in this response, Cadmus never presents its sample of KCP&L customers with a PAYS offer that includes all of its benefits, so the survey provides little insight into whether those surveyed would like or dislike a PAYS offer. The choice to ask questions about features of PAYS in isolation (and not all of the features) rather than about the actual PAYS offer and its benefits for customers undermines the survey. There is no basis for the conclusion from the Cadmus survey that PAYS will prove unattractive, since the sample of KCP&L customers were not presented a PAYS offer.

2. Unrealistically high cost estimates

Loan loss reserves:
On pages 39 and 40, Cadmus writes, "*Research for other PAYS feasibility studies has found several PAYS administrators, including the MACED program in Kentucky, use loss reserves to fully protect ratepayers from participant nonpayment. Loss reserve funds typically are set equal to a certain percentage of the program's outstanding loan volume, just above the expected nonpayment rate. This limits the funding amount needed in reserve, but protects the administrator (and ratepayers) from absorbing the cost of unrecovered investments.*"

In three and four years of program operation respectively, neither Ouachita Electric (Arkansas) nor Roanoke Electric (North Carolina) Cooperatives has filed a claim against their reserve fund. Actual PAYS programs that report uncollectables average less than a 0.1 percent loss. MACED, cited above by Cadmus, has less than a 0.2 percent nonpayment rate. According to MACED program manager Chris Woolery, since How$mart®KY program design changes and a revised tariff were put in place in August 2013, only one of MACED's utilities filed a claim against the risk mitigation fund.[3] Nevertheless, Cadmus assumes a five percent charge on project funding to be paid by program participants for a reserve fund (Table 9, p. 41), 25 times the nonpayment rate at MACED.[4] Since PAYS uncollectables average 0.1 percent and the Illinois Energy Efficiency Loan Program (EELP) had uncollectables of 0.16 percent (p. 39) and both are lower than average uncollectables for KCP&L, there is no need to require participants to pay for a costly loss reserve fund, which makes fewer upgrades qualify for installation.

[3] Based on a Jan. 3, 2019 phone call with Harlan Lachman.
[4] MACED was required by the implementing utilities to fund a reserve fund through participant fees based on 5% of their upgrades' cost. This was not a design recommendation, nor has the amount been reduced in spite of the performance of collections at PAYS upgraded locations.

IT upgrades:
The report states, "*Upgrades to IT systems that manage billing may be a significant cost – in the low hundreds of thousands as a base estimate...*" (p. 41).

Cadmus provides no credible source for this estimate. The only utility that we know of that commissioned an add-on module to its information and billing system software system to comply with EEI's (and its own staff's) recommendations spent less than $40,000 for the upgrade (c.f., p. 3 of the Cadmus Process Evaluation Report of the Windsor Efficiency PAYS® program). Before the estimate in the report for KCP&L is taken seriously, Cadmus should share the bids that justify an estimate that is five to 10 times an actual expenditure noted in a previous Cadmus evaluation.

Origination and servicing for consumer loans:
On pages 41 and 42, in Table 8. Estimated KCP&L Costs for Annual PAYS Implementation, Cadmus estimates a servicing cost of $900 per participant, an origination cost of $600 per participation, and a $700 - $1000 cost per participant for implementation.

Origination and servicing are terms related to consumer loans, and they refer to activities like underwriting and debt collections. These activities are not applicable to PAYS investments with on-bill cost recovery and, therefore, those costs are not necessary.

EEI does not dispute an estimate of a one-time $700 - $1000 per-participant cost for implementation by the program operator although in most PAYS weatherization programs, participants reimburse their utility approximately $325 of these costs which are rolled into the participant's project cost (c.f., Roanoke, Ouachita, and Appalachian Electric). The one-time implementation cost includes the work to visit the site, develop a proposal, discuss the proposal with the customer, get a signature, inspect the installation, and communicate to the utility that it should begin to collect the monthly charge.

None of the 17 utilities, including the two IOUs that have operated programs based on PAYS, have reported one-time or annual per-participant costs for servicing of $900, and similarly, none have reported one-time or annual per-participant costs for origination of $600. These costs should be eliminated from the Cadmus estimate of total costs.

Unnecessary staffing:
In the second of four conclusions in the Executive Summary (p. 3) and again in the Conclusions section (p. 46) the report states, "*While a significant number of customers accepted the PAYS offer, survey responses indicated a significant information barrier for many customers when evaluating this unique program.*" Cadmus goes on to write, "*KCP&L intends to add additional staff to manage its pilot programs. Cadmus expects that this staff will be critically important to ensuring the program delivers a clear, strong message...*"

These additional staff are unnecessary and needlessly inflate the costs for implementing a PAYS program. Since not only have a significant number of customers accepted offers, but a very high percentage of customers receiving offers accepted them, it is unlikely that there is a "significant information barrier." More than 80% of customers in neighboring Arkansas and approximately 70% of customers in neighboring Kansas who have received PAYS offers said yes to those offers. These are unprecedented customer acceptance levels for utility efficiency programs that contradict the notion that there is a significant information barrier that requires the addition of expensive new

staff, which will reduce funding available for efficiency upgrades that the program can offer to customers.

3. Low penetration targets and few eligible measures

Renters:
On page 43, Cadmus wrote, "*In interviews conducted for the Ameren Missouri PAYS feasibility study, a PAYS implementer reported that, in most cooperative PAYS programs in the Midwest and South, the majority of participants were single-family home owners.*"

While it is true that most participants have been single-family home owners, it's noteworthy that Arkansas' HELP PAYS® reached 100 percent of the customers in the service territory living in multifamily housing and responsible for their energy bills. And just a few years ago, Kansas' How$mart® program reported that 15 percent of its participants were renters. These are significant achievements in this hard-to-reach market and should be used as the basis for setting minimum goals for penetration levels that utilities initiating programs should be expected to reach with renters.

Overall program participation:
In its presentation of Estimated Costs Paid by Participants (Table 9, p. 42), Cadmus assumes a program of 250 customers in a year. That scale is smaller than the sample size for Cadmus' survey for its report for KCP&L.

In citing Participation in PAYS Programs (Table 10, p. 43), the report lists the number of participants in several programs that are based on PAYS without noting the percentage of each utility's customers served by the program. In a revised version of Table 10 below, EEI shows the level of participation that could be assumed for KCP&L if it served the same percentage of its residential customers as the utilities cited by Cadmus. This table shows that it would not be unreasonable to expect KCP&L to implement a program serving 21,000 customers in three years, since the HELP PAYS® program reached 4% of Ouachita Electric Cooperative's customers in only two years.

By using a number as low as 250 participants in a year, the Cadmus report sets a very low bar for KCP&L program participation compared to programs operated in other states.

Residential Program	Number of Utility Customers	Participants	Years of Operation	Comparable KCP&L Participants*
HELP PAYS®	6,500	278	2016–2017	22,000
Upgrade to $ave	14,000	400	2014–2017	15,000
How$mart®	50,293	1915	2010-2018	20,000
Windsor Efficiency PAYS®	8,000	242	2012-2014	16,000
How$mart®KY	139,230	289	2011–2017	1,100

* KCP&L has 522,032 residential customers.[5] These numbers are derived by applying the percentages of residential customers that are program participants for the other listed utilities to the number of KCP&L residential customers.

[5] This estimate was provided to EEI by the Office of the Consumer Counsel.

Eligible measures:

• On page 9, the report states, "*Cadmus relied on recently completed feasibility studies for PAYS in Ameren Missouri's and Empire District's territories for acquiring basic information on the requirements to launch and operate PAYS, and findings from currently implemented PAYS and on-bill financing programs. As the author, Cadmus could access these unpublished reports and the primary data collection informing them.*"

Cadmus evaluated the feasibility of implementing a PAYS program for Empire District and Ameren primarily on its assessment of the costs and economics. EEI reviewed Empire District Feasibility Study by Cadmus and wrote a detailed assessment noting: "There are a number of assumptions included in the Cadmus analysis, however, that significantly reduce the reported cost effectiveness of implementing PAYS in Missouri…" The Office of the Public Counsel filed EEI's response with the Missouri Public Service Commission (https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=ER-2016-0023&attach_id=2018021923).

• On page 19, the report for KCP&L states, "*In other analyses of PAYS feasibility, replacing working electrical heating equipment with a high efficiency heat pump was the only project that generated sufficient savings to allow administrators to finance full project costs under PAYS guidelines.*"

Two utilities in neighboring states achieved the high offer acceptance rates described above (80% of customers receiving an offer in neighboring Arkansas' HELP PAYS® program and more than 70% in Kansas' Midwest Energy's How$mart® program) even while installing comprehensive residential upgrades such as air and duct sealing, gas fired heating upgrades, high efficiency heat pumps, attic insulation, LEDs, low flow showerheads, and ground water heat pump systems. In EEI's response to the Cadmus study for Empire District, EEI discusses some of the reasons why Cadmus arrived at this faulty conclusion distorting PAYS potential in Missouri.

On page 25, the report for KCP&L states, "*Other PAYS feasibility studies have shown that project savings must be extremely high to generate saving necessary for PAYS to cover most or all upfront project costs. Upgrading working electric furnaces to high-efficiency heat pumps is one of a few project types likely to consistently provide sufficient savings to support full project funding.*" And, on page 44, Cadmus writes, "*At the same time, analysis for Ameren Missouri and Empire District found that PAYS, if limited to projects offering sufficient savings for the program to fund full project costs, potentially could be cost-effective with fewer than 300 participants.*"

Midwest Energy in Kansas, with only 50,293 electric customers (https://www.mwenergy.com/assets/uploads/pages/2017_Annual_Report.pdf), has fewer than 10% of KCP&L's customers (and a small percentage of the cited number of customers for both Ameren and Empire District), yet it has completed 1,915 projects. While these projects involved some copayments, it would seem reasonable that if Midwest Energy is able to report that more than 70% of offers have been accepted, Cadmus' presumption that a program needs to operate with no copayments is unnecessarily limiting eligible measures.

An independent February 2018 evaluation of Ouachita Electric Cooperative's HELP PAYS® program performed by OptiMiser LLC, reported that 92% of participants installed air sealing, 75% installed duct sealing, 88% installed LEDs, 79% added attic insulation, and 80% installed HVAC

upgrades. Recent results at a utility in an adjacent state serving one of the most economically distressed regions in the country shows that most customers accept offers to install comprehensive energy efficiency upgrades in both owner-occupied and rental housing.

Finally, it is important to note that in all three of the feasibility studies prepared by Cadmus to date for investor-owned utilities in Missouri, in addition to using incorrect assumptions about operations and upgrade costs, Cadmus excludes customers' gas savings as a program benefit. Excluding gas savings from customers' upgrade cost-effectiveness calculations reduces the number of eligible upgrades that will qualify for the tariff. For at least half of the programs not targeted to a single upgrade (e.g., Hawaii's Solar$aver pilot replaced electric water heaters with solar water heaters), the PAYS tariff allowed customers' gas savings to be included in the cost-effectiveness screening to determine which upgrades could be installed.

Cadmus' focus on targeting replacement of electric furnaces with heat pumps is viable, although other upgrades should be included in those homes as has been the case in the Kansas and Arkansas PAYS programs. In its previous studies of the PAYS system for two other investor-owned utilities in Missouri, Cadmus examined only savings from the utility's perspective and ignored savings from the customer's perspective. This error appears to be the basis for the exclusion of heat pumps that replace gas and propane HVAC systems from the list of eligible measures.

In the PAYS system, the determination of which upgrades qualify for a PAYS tariff considers all the savings that will accrue to participants, excluding societal costs and energy rate inflation. Due to the efficiency of propane-fired heating systems and the high cost for propane, the savings for customers who heat with propane may be even higher than those who heat with electricity. In its study noted above, OptiMiser LLC wrote that the HELP PAYS® program includes upgrades that result in fuel switching: "The participants included 4 apartments, and 6 homes where the HVAC measure resulted in fuel switching." (p. 9) In Kentucky, fuel switching is also permitted. MACED's six utilities allow gas heating customers to fuel switch to heat pumps, but it is only cost effective when customers use propane for heating.

4. Survey flaws

The Cadmus study for KCP&L has discussed the viability of PAYS in its report based primarily on survey data. The challenge with surveys is sample size (i.e., whether the sample is large enough to make generalizations to the total population), sample selection (i.e., whether the sample represents the same characteristics of the total population), response rate (i.e., whether enough respondents respond to a question to ensure accuracy), and question wording (i.e., whether the questions were clearly worded in an unbiased way so responses can be trusted).

There are approximately 522,032 KCP&L residential customers including customers served by KCP&L Missouri and by KCP&L Greater Missouri Operations.[6] Based on estimates provided by Cadmus (p. 25), EEI assumes approximately 65% are in owner-occupied houses (339,000 homeowners) and 35% are in rental units (182,000 renters).

In its study for KCP&L (p. 7), Cadmus' sample size for homeowners was 321 and for renters 62 for a total of 383, which is a little more than .07 percent of residential customers. However, some of its findings were based on a fraction of those numbers. For example, in Figure 6 relating to interest

[6] Information provided by the Missouri Office of Public Counsel.

rates, findings were based on the responses of 58 homeowners, just 18 percent of the sample size or less than 0.02 percent of single-family customers. The sample size for renters is only 16 percent of the total sample size though renters account for 35 percent of the KCL&P's residential customers. Inadequate sample size, non-representative sample selection, low response rate, and poorly framed questions may be responsible for the anomalies discussed below.

• On page 24 Cadmus writes, *"As shown in Figure 16, renters accepting the utility offer in the second scenario dropped to 42%. Of 36 respondents selecting Option A in Scenario 1, 14% (five respondents) said they were not sure if they would accept Option A in Scenario 2, and 31% (11 respondents) selected Option B. Of 26 respondents that did not select Option A in Scenario 1, 23% (six respondents) selected Option A in Scenario 2."*

Cadmus has reported findings here as if they provide significant information for utility planners to consider in developing a PAYS program. The number of respondents is so small that the findings do not provide a basis for decision making.

• On page 14, the authors write, "*Three respondents (4%) indicated that they wanted their monthly energy savings to be more than their monthly payments.*" On page 16, they write, "*The ability to qualify for a loan was the least likely to be rated for a significant concern, with only 16% of the respondents ranking this barrier a 4 or a 5.*"

On its face, Cadmus reports that only 4 percent of the customers in the sample indicated that they wanted their savings to exceed their payments, so 96 percent did not have this concern. Implicit with the second quote is that if only 16 person percent indicated they were concerned about being able to qualify for a loan, the rest of the KCP&L customers in the sample either had the money or did not doubt their ability to obtain credit at acceptable terms. Both of these observations raise questions about whether the sample of customers was representative of one of the customer market segments that KCP&L would want to reach with a PAYS offer.

In **Figure 4. Homeowner Alternative Purchase Decision**, Cadmus notes that of those homeowners who responded to the survey, 152 paid cash and only 71, less than half, used some form of financing. In **Figure 3. Homeowner Payment Method by Project Costs**, Cadmus showed the range of costs for these projects. Most projects cost more than $3,000 and some respondents financed projects up to $48,000. At no project cost amount did more than half of Cadmus' respondents choose financing.

This sample is supposed to be representative of KCP&L's residential customers, at least half of whom are likely to be low- to moderate- income customers and approximately 35% of whom are renters (p. 47). It is not credible that 96 percent of this population was unconcerned about having positive cash flow or that 84 percent were unconcerned about their ability to qualify for a loan. The report does not provide adequate information to discern how Cadmus' conclusions were affected by the sample selection, the number of respondents, questions asked, or how the questions were worded.

The validity of the sample size for renters surfaces as an issue again in the study for KCP&L on page 22: *"Nine renters reported paying for a home improvement project, with project costs ranging from $793 to $5,000, with an average cost of $1,666. This question was not limited to the energy-related projects in Figure 13, but one respondent purchased a water heater, one purchased a major*

household appliance, and two said they purchased all or part of an HVAC system. The nine respondents that reported paying for a project used a variety of payment methods."

The split incentive between property owners and renters is acknowledged as a barrier to installing improvements in rental housing and especially multifamily housing. "*The two respondents paying cash or using their credit cards reported doing so as the cost was too small to finance, and they had the cash available.*" There is no explanation why these renters opted to make improvements to their landlord's buildings costing as much as $793 - $5,000. It is not typical for renters to pay for expensive improvements to a building they don't own. These responses without explanation should not influence how a PAYS or any program can best reach KCP&L's hard to reach customers.

• A subtle problem with Cadmus' study for KCP&L is that the questions, at least as represented by this report, appear flawed. For example, in scenario 2 on page 18, the monthly payments are presented in one sentence while the estimated savings are provided in the following sentence — with no mention that the savings exceed costs by 25 percent. One might legitimately question whether the sample customers understood the relationship between costs and savings. If this information had been in one sentence that identified the percent by which savings exceed costs, there might have been a different response.

5. Recommendations for KCP&L implementation of a PAYS® program

EEI is including recommendations in this response to show how PAYS could be implemented in KCP&L service territories in a way that is in line with the company's stated preferences, avoids licensing and design costs, eliminates the need for new staff, and is delivered by a proven program operator.

<u>KCP&L preferences</u>
On page 35, Cadmus reports five KCP&L's preferences for its efficiency programs and two assumptions about such programs that are not in alignment with its preferences:

1. "*KCP&L staff confirmed that the typical KCP&L energy efficiency program is designed for implementation by a third party, with minimal management required by internal staff.*"

2. "*As required by the Missouri Energy Efficiency Investment Act (MEEIA), all programs must pass a cost-effectiveness test, except for programs targeting low-income or multifamily markets.*"

3. "*KCP&L generally selects programs based on their ability to deliver cost-effective energy savings at scale; so the utility meets its energy efficiency targets at the least cost to ratepayers.*"

4. "*Because of the multiyear timeframe, the utility favors field-tested program models to incur the least risk possible to the portfolio's ability to achieve its goals.*"

5. "*For the coming year, KCP&L staff reported it will place greater priority on programs that target hard-to reach markets that historically have not participated in existing programs in large numbers: low-income and multifamily.*"

   - "*KCP&L staff expect that programs targeting hard-to-reach markets will present challenges that the utility has not faced with its more mainstream programs. For example, staff expect pilot programs specifically targeting these harder-to-reach markets to require a dedicated*

internal staff to identify opportunities, coordinate pilot implementation, and provide customer support."

- *"Another issue may be achieving scale; staff expect to pilot multiple new program models, and then focus on scaling up pilots that show potential for increased participation."*

EEI proposes an approach that meets all five criteria and does not require adding additional program staff to reach harder-to-reach markets or multiple pilots that unnecessarily waste utility resources on anything other than the best possible program. The program that EEI recommends:

- Will be implemented by a third party so no new staff need to be hired by KCP&L. Existing managers may be able to oversee program operations using data management tools provided by the vendor.

- Will pass any utility cost-effectiveness test since participants pay almost all costs for their upgrades even though the program can be targeted to harder-to-reach customers as it has been in Arkansas and North Carolina.

- Can reach four percent of KCP&L's residential customers (i.e., approximately 21,000 customers) in three years after a three- to five-month start-up period following approval by the Public Service Commission.

- Will incur the largest investment in resource efficiency upgrades for the least possible impact on KCP&L's budget for ratepayer funded spending on energy efficiency resources.

- Can reach large numbers of renters and low- moderate-income, hard-to-reach customers.

- Will not require a dedicated internal staff to address the challenges assumed in serving hard-to-reach customers.

- Has been field tested and produced outstanding results in several states, including two adjacent states for several years.

EEI recommends that KCP&L implement a residential PAYS program by hiring a third-party operator, such as EEtility, Inc. EEtility operates the successful programs in Arkansas and North Carolina. The program should have the funding and capital to reach at least 21,000 customers including hard-to-reach customers. EEI has consulted with EEtility management and they are prepared to operate a program for KCP&L at this scale. This recommendation will achieve all of the bulleted claims noted above and eliminate the need for KCP&L to pay EEI for a license for its intellectual property, hire new staff to fulfill new duties, or to pay what Cadmus estimates as "*PAYS program design and marketing*" of *$50,000* (**Table 7. Start-up Costs for PAYS.** 41).

This recommendation should also result in the greatest likelihood of Missouri Public Service Commission approval for a PAYS program. Since five commissions and other oversight bodies (e.g., Tennessee Valley Authority) have approved PAYS programs targeting investor-owned, cooperative, and municipal utilities, these Commissions have established precedents that would facilitate Missouri Public Service Commission approval, especially when two of those states border Missouri. The success of the seventeen programs in seven states would also seem to facilitate Missouri Public Service Commission approval. Finally, if KCP&L seeks approval for a program

implemented by a proven PAYS program operator, that would also seem to facilitate Missouri Public Service Commission approval.

In order to illustrate what a PAYS program that would enable 21,000 customers in three years to implement projects averaging $5,500, based on EEI's recommendation, we have used the categories shown in Cadmus' Tables 7 and 8 to compare Cadmus' to EEI's estimates.

Revised Tables 7 & 8 Showing KCP&L Costs for a 3-year program serving 21,000 customers based on Cadmus' estimates and EEI estimates for an EEtility-operated program

Category	Cadmus Estimated Cost	EEI Estimated Cost
PAYS design & licensing	$50,000	$0 licensing; $20,000 assistance with testimony and capital
Utility Administration (program staff)	$240,000	$240,000 (or $0 if existing personnel are assigned)
Implementation $700 to $1,000 per participant	$15.4 – $21.0 million	$20,450,000 ($975 per participant)
Participants Fees	-$0	-$6,825,000 ($325 each)
Marketing/outreach $25,000 per yr.	$75,000	$75,000 (or less)
Evaluation $24,000 per yr.	$72,000	$72,000 (or less)
Servicing (10-year term) $900 per participant	$18,900,000	$0 No loans to be serviced
Origination $600 per participant per year for each year of tariff duration (12 yr. per)[7]	$12,600,000	$0 One loan to utility
Call Center ($61 per participant)	$1,281,000	$0 (Program Operator handles most calls; Utility handles remainder)
Subtotal	**$54,218,000**	**$14,057,000**
Capital Costs (interest to be paid by participants) $5,500 per project	**$115,500,000**	**$115,500,000**
Utility Cost Recovery 15 years (12-year tariff and 3 years of implementation)	Uncollectables offset by participant funded loss reserve	**$115,384,500**
Net Capital Costs	**$0**	**$115,500**
Total Utility Costs	**$54,218,000**	**$14,172,500**

EEI's recommended approach would cost KCP&L only 26 percent of the total cost of this sized program using Cadmus' assumptions. KCP&L's total costs would be less than 12.3 percent of its total investment in efficiency upgrades.

Tables 7 and 8 do not show that for a program of this size, Cadmus' is proposing that KCP&L charge participants a one-time five-percent fee of their project's costs to fund a loss reserve fund. In the above example, Cadmus would charge participants $5,775,000 (i.e., .05 X $115,500,000) to protect against estimated uncollectables likely to be less than $115,500.

[7] The sentence describing Origination costs could be interpreted in two ways. EEI interprets the Origination costs to mean $600 per participant for every year there are participants.

Addendum
Misinformation in the report by Cadmus for KCP&L that should be corrected

In this Cadmus report for KCP&L, as in the Cadmus report for Empire District, there is information presented as fact and used as the basis for assumptions that is not correct.

Since Cadmus published *The Empire District Electric Company PAYS Feasibility Study* (May 31, 2018), new information has been published about the field experience with PAYS that would have prevented a repeat of many of the errors Cadmus made in that study. Instead, Cadmus repeatedly cites the Empire report in its KCL&P report and repeats many of its errors.

Here are links to three documents published between the date of Cadmus' study for Empire District and this one for KCL&P:

- The Missouri Office of Public Counsel submitted EEI's response to Cadmus' Empire District report on the public record on June 28, 2018 (https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=ER-2016-0023&attach_id=2018021923);
- Jessica Lin wrote a *The Pay As You Save Program in Rural Arkansas: An opportunity for rural distribution cooperative profits* published in the Electricity Journal (Volume 31, Issue 6, July 2018, Pages 33-39, payment required without a subscription https://www.sciencedirect.com/search?pub=The%20Electricity%20Journal&volume=31&issue=6&show=25&sortBy=relevance&origin=jrnl_home&zone=search&cid=272016)
- Dr. Holmes Hummel and Harlan Lachman wrote a piece entitled *What is inclusive financing for energy efficiency, and why are some of the largest states in the country calling for it now?* published by ACEEE on September 4 (https://aceee.org/files/proceedings/2018/index.html#/paper/event-data/p401)

While we have not noted every error in Cadmus' report, we highlight below a number of them to illustrate the nature of these errors, each of which can be corrected in this and future feasibility studies of the PAYS system. In this section, we have copied statements from the Cadmus study for KCP&L and then explained the apparent error.

1. On page 36, the report states, "*Although a trademarked concept, in practice, PAYS programs are typically customized to a program administrator's needs, as long as it includes the basic features (e.g., the energy audit, capped monthly tariff, no credit score requirement). Most PAYS programs conform to a common organizational structure, as shown in* ***Figure 21 PAYS Program Design***."

None of the seventeen utilities that have or are operating PAYS programs use the model illustrated in Figure 21. In the myriad presentations given about PAYS by knowledgeable people, many of which are available on the web (e.g., http://www.cleanenergyworks.org/about-pays/) none have used this model. We have no idea where the image in Figure 21 came from, but it confuses PAYS with a loan program by including an Origination Provider and a Servicer, both roles associated with consumer loans. Since PAYS does not involve consumer loans, neither role is needed for a PAYS program.

Also the "basic features" noted in the quote above do not correspond to PAYS Essential Elements and Minimum Program Requirements, which all PAYS programs must include, noted on EEI's website (http://www.eeivt.com/?page_id=48).

2. On page 38, the report states, "*No investor-owned utilities (IOUs) currently implement PAYS.*"

Eversource, an IOU, is operating the longest running PAYS program, Smart$tart, in New Hampshire and has been since 2002. https://www.eversource.com/content/nh/business/save-money-energy/manage-energy-costs-usage/smart-energy-solutions/municipal-smart-start-program.

3. On page 38, the report states, "*IOUs, as regulated entities, face strict requirements for protecting ratepayers from unnecessary expenses.*" Again, on page 40, it states, "*Cooperatives and municipal utilities, which are not regulated and do not answer to shareholders, have greater leeway for accepting financial risk to ratepayers through an energy efficiency program used by only a minority of customers. IOUs face much tougher restrictions on types of financial risk they can incur.*"

There are two issues raised by these statements. First, there is a suggestion that energy efficiency expenses are an unnecessary expense. Commissions in five states (and oversight bodies in three other states, including the Tennessee Valley Authority) have approved the use of a PAYS tariff with disconnection for nonpayment because regulators consider efficiency investments to be part of basic service that the utility is obligated to provide to its customers. These are not unnecessary expenses.

Second, there is an implication that the financial risk related to operating a PAYS program is significant enough that an IOU might not able to tolerate it. As is noted in Section 2 Unrealistically high cost estimates in this response, of the utilities with PAYS programs that have reported rates of uncollectables for participants, the average nonpayment rate is less than 0.1 percent, which is lower than most utilities' prevailing rate for uncollectable charges. Further, because installation of efficiency upgrades lowers customers' bills, PAYS programs actually reduce risk to utilities because customers are better able to pay their bills, which is consistent with the low rate of nonpayment observed among PAYS participants.

4. On page 38 Cadmus writes, "*Most private sector investors have very little appetite for alternative screening methods, such as the bill payment history used by most PAYS programs, despite that most PAYS programs—like most energy efficiency financing programs—offer nonpayment rates below 2%.*"

PAYS does not involve consumer loans. The only loan that might be part of a PAYS program is a capital provider's loan to the utility to capitalize its PAYS investment portfolio. A loan to the utility is made based on the strength of the utility's own balance sheet, and not based on the creditworthiness of customers determined by any screening methods. Since any private sector investor putting up capital for a PAYS program would be making a loan to the utility, not to an individual customer, the screening methods used by the utility with its customers should be of little concern to the investor.

Even if a private sector investor was concerned about the prospects of utility default on its commercial paper (i.e. corporate debt), PAYS programs require that utilities make payments to capital providers on the schedule set out in the loan agreement regardless of a utility's collections from its customers. Additionally, since PAYS requires that the utility have access to disconnection for unpaid PAYS charges, applying the same protocols as apply to all other utility charges, the utility is assured of its normal high rate of cost recovery. And, finally, since PAYS requires that a utility treat PAYS uncollectables the same as all other uncollectables, all ratepayers will pay to offset any small losses that may occur.

Since PAYS makes it easier, not harder, for participants to pay their bills, there is no requirement that PAYS programs do any screening of customers except based on whether they have cost-effective upgrade opportunities in their homes. In our experience, utility managers typically want to build in a review of a customer's bill payment history as a screening tool and not invest in efficiency at a location where a customer chronically misses payments. This is not a screening method that is required for a PAYS program.

5. Cadmus writes that one of its objectives for its study is to answer, "*...whether PAYS or another on-bill financing program offers the best approach to address unmet financing needs.*" (Executive Summary, Objectives, p1).

First, PAYS is not a consumer loan program. Second, loan programs by design do not reach more than half of a utility's customers (i.e., low- moderate- income customers and renters), and they do not achieve comparable offer acceptance rates in the field. Therefore, framing a question about whether on-bill loan programs or the PAYS system offers the best approach to addressing unmet financial needs raises the question as to why this question was even asked.

6. Cadmus listed its fourth conclusion in its executive summary (p. 3) and conclusion (p. 47), "*The primary PAYS barrier for KCP&L will be obtaining regulatory approval for appropriate credit enhancements to attract investors willing to provide low-cost capital.*"

There is no basis in this report for this conclusion. First, there is no need to enhance consumer credit because the creditworthiness of a customer does not put capital at risk. Second, investors routinely provide large amounts of low-cost capital to utilities with sound balance sheets, and these transactions typically occur without regulatory approval of subsidies to attract investors. If the utility is willing to guarantee repayment of principal and interest to a capital provider regardless of collections, as PAYS requires, no subsidy on the cost of capital would be warranted. (See http://www.eeivt.com/?page_id=48)

7. On pages 29 through 34, Cadmus compares various financing products (e.g., credit card, PACE, OBF) to PAYS.

PAYS is not a financing product, but rather it is a utility investment system with cost recovery via tariffed charges over time paid by customers residing at a location where upgrades have been installed. In Table 5 on page 32, Cadmus summarizes its perceived differences between financing products and PAYS:

- Overall Cost. The ratings for the overall cost estimates of OBF, PACE, and PAYS are backwards. No OBF or PACE program includes control of upgrade or installation pricing. All of the recent PAYS weatherization programs have included mechanisms to ensure fair prices for participants (e.g., RFPs, maximum price paid, etc.). OBF programs require credit enhancements, especially if a utility has any interest in providing financing to customers with low eligible credit scores. PAYS needs no credit enhancements. The "Excellent" rating for OBF and the "Okay" rating for PAYS should be switched.

- Available Loan Amounts. This category should refer to "available capital amounts," without specifying the financing mechanism. The ratings for the overall available loan amounts for financing products and PAYS are also backwards because it appears that Cadmus presumes

larger amounts of capital are better. Most cost-effective efficiency projects in the residential sector range from several hundred dollars to $9,000. Many PACE and OBF programs have minimum loan amounts that prohibit installation of moderate-cost upgrades (e.g. less than ~$5,000) for anyone who lacks the disposable income to install them. PAYS does not involve loans to participants, and most PAYS programs do not have minimum project cost limits. More of these projects can be addressed by PAYS than by loan products that have high minimums (e.g., $5,000). By looking at amounts needed for reaching cost-effective efficiency improvements in the residential sector, the "Excellent" ratings for home equity lines of credit (HELC) and OBF should be switched with the "Poor-Okay" rating for PAYS.

- Outcome When Borrower Moves. Every category in Table 5 has an understandable rating, even though some of the ratings are wrong. This category has no ratings. The rating for HELC and OBF when the borrower moves should be "Poor" since the borrower must pay off the obligation when they move from the home. For any participant that leaves their residence before the cost recovery period is complete, the requirement to make all future payments in one lump sum is almost guaranteed to leave them with negative savings from their efficiency improvements. The rating for PACE should be poor-good. PACE also requires the borrower to pay off the balance due unless a successor customer agrees to assume the payment obligation (without any assurances the upgrades will last as long as the payments and with the leverage of being able to force the seller to pay off the obligation). Given these alternatives, PAYS is the best option for the original participant (who is not a borrower) and should be rated "Excellent".

8. On page 32 Cadmus writes, "*States do regulate some aspects of the financing market, such as licensing lenders, and rules vary from state to state. However, from the consumer perspective, differences in available financing products are modest even across state lines.*"

PAYS does not involve any consumer loans.

9. On page 33, the report states, "*PAYS was rated Poor-Okay due to its strict formula for determining available funding, which will cover the full project cost of only a handful of measures.*"

Some experts consider the fact that PAYS highlights which portion of the cost of an upgrade will provide immediate net savings and which portion will not to be one of the major benefits of the PAYS system. This feature is a consumer protection. PAYS has not encountered consumer advocates' attacks such as those regarding predatory practices in the credit card industry. PAYS has not experienced rejection such as those by California municipalities seeking to ban PACE in their municipalities (c.f., http://www.governing.com/topics/transportation-infrastructure/gov-california-cities-clean-energy-loans-pace.html or https://www.latimes.com/business/la-fi-pace-bakersfield-20170720-story.html) because of problems with foreclosure caused by high lending costs for equipment that is no longer working or not producing sufficient savings to offset their costs.

10. Cadmus writes on page 36 that, "*While a utility may operate a tariff or financing program using internal resources and capital, most IOUs choose to partner with organizations that specialize in this function. The origination provider may serve as a liaison with a capital provider.*"

Neither of the two IOUs that have implemented PAYS programs have used origination providers.

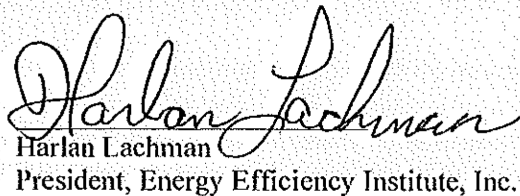
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

AFFIDAVIT OF HARLAN LACHMAN

STATE OF VERMONT)
) SS.
CHITTENDEN COUNTY)

COMES NOW HARLAN LACHMAN and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *RESPONSE TO CADMUS' "PAYS' FEASIBILITY STUDY"*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.



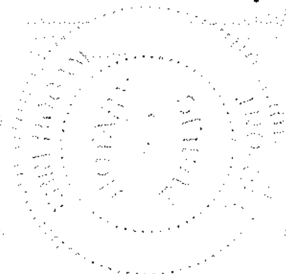
Harlan Lachman
President, Energy Efficiency Institute, Inc.

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the Chittenden County, State of Vermont, at my office in the Town of Colchester, on this 8th day January, 2019.

Signature Erin Hogan #157-00001348
Print Name Erin Hogan
Notary Public

My Commission expires 1/31/2021.



Schedule JO-2

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

AFFIDAVIT OF PAUL CILLO

STATE OF VERMONT)
) SS.
COUNTY OF CALEDONIA)

COMES NOW PAUL A. CILLO and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *RESPONSE TO CADMUS' "PAYS' FEASIBILITY STUDY"*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Paul A. Cillo
Vice-President, Energy Efficiency Institute, Inc.

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Caledonia, State of Vermont, at my office in Hardwick, on this 7th day January, 2019.

Notary Public

My Commission expires 2-10-2019.

Schedule JO-2