STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANAPOLIS POWER & LIGHT COMPANY D/B/A AES INDIANA FOR COMMISSION APPROVAL OF AN ELECTRIC VEHICLE PORTFOLIO, INCLUDING: (1) A PUBLIC USE ELECTRIC VEHICLE PILOT PROGRAM PURSUANT TO IND. CODE CH. 8-1-43; AND (2) TIME-VARYING AND OTHER ALTERNATIVE PRICING STRUCTURES AND TARIFFS PURSUANT TO IND. CODE §8-1-2.5-6(3); AND FOR APPROVAL OFASSOCIATED ACCOUNTING AND RATEMAKING	)	**CAUSE NO. 45843**

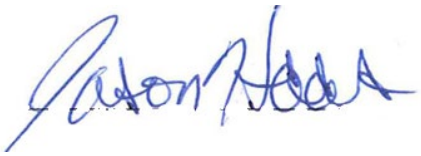
INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC'S EXHIBIT NO. 1

TESTIMONY OF JOHN W. HANKS

APRIL 27, 2023

Respectfully submitted,



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TESTIMONY OF OUCC WITNESS JOHN W. HANKS
CAUSE NO. 45843
INDIANAPOLIS POWER & LIGHT D/B/A AES INDIANA

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is John W. Hanks, and my business address is 115 W. Washington St., Suite 1500 South, Indianapolis, Indiana 46204.

Q: By whom are you employed and in what capacity?

A: I am employed as a Utility Analyst in the Indiana Office of Utility Consumer Counselor's ("OUCC") Electric Division. A summary of my educational background and experience is included in Appendix A attached to my testimony.

Q: What is the purpose of your testimony?

A: I describe Indianapolis Power & Light Company d/b/a AES Indiana's ("AES Indiana" or "Petitioner") request for approval of the proposed Electric Vehicle ("EV") Portfolio ("EV Portfolio") and introduce other OUCC witnesses. My testimony describes the inputs and results for AES Indiana's benefit/cost testing as well as customer impacts. Ultimately, I recommend the Indiana Utility Regulatory Commission ("Commission") deny the EV Portfolio as proposed by AES Indiana, due to lack of support regarding the programs' proposed costs. Additionally, approval would be premature considering the Commission's investigation into electric vehicle issues in Cause No. 45816.

Q: Please describe the review and analysis you conducted in order to prepare your testimony.

A: I reviewed Petitioner's case-in-chief and composed and examined responses to discovery requests. I also reviewed the testimony and the Commission's Final Order in Duke Energy Indiana's ("DEI") request for an EV program, Cause No. 45616.

Q: To the extent you do not address a specific request, item, or adjustment, should that be construed to mean you agree with Petitioner's proposal?

A: No. The absence from my testimony of a reference to any specific request, item or adjustment AES Indiana proposes does not indicate my approval of that request, item, or adjustment.

II. EV PORTFOLIO OVERVIEW

Q: Please describe the components of the proposed EV Portfolio.

A: The EV Portfolio has two parts: 1) a set of Public Use EV Pilot Programs ("Pilot Program"); and 2) alternative rates, tariffs, and pricing structures.[1] There are four programs within the Pilot Program, six alternative rates, tariffs, or pricing structures, and one tariff closure. The Pilot Program includes:

- Bi-directional Charging Pilot
- Fleet Solutions
- EV Supply Equipment ("EVSE") Rebates
- EVSE Rebates for Disadvantaged Communities.[2]

The six alternative rates, tariffs, or pricing structures, and one tariff closure, include:

Residential

[1] Petitioner's Exhibit No. 1, Direct Testimony of Zachary Elliot, p. 3, lines 16-17.
[2] *Id.,* p. 5, lines 6-18.

- Residential Managed Charging
- Off-Peak Incentive
- Rate EVX (closed to new participants)

Commercial, Industrial, and Public

- Commercial & Industrial ("C&I") Managed Charging
- Rate EVP[3]
- Rate Direct Current Fast Charging ("DCFC")
- Tariff EVSE[4]

Q: What is the EV Portfolio's total cost?

A: Petitioner estimates the EV Portfolio's total cost, excluding carrying costs, to be approximately $16.1 million, and $17.3 million when carrying charges are included.[5]

Q: How does AES Indiana's requested EV Portfolio scope compare to other EV programs the Commission approved?

A: On June 1, 2022, the Commission approved DEI's EV pilot proposal for two years with a $3.3 million cost cap, plus actual carrying costs.[6]

Q: Does the pending EV investigation include issues that are relevant to this Cause?

A: Yes. In Cause No. 45816 the Commission began a collaborative investigation to consider issues involving electric vehicles. The Commission provided questions it will seek answers for in this investigation, including the appropriate allocation of costs between rate classes and how utilities manage system upgrades that are

[3] Electric Vehicle Charging on Public/Private Premises ("EVP").
[4] Elliot Direct, p.5, lines 24-28 to p. 6, lines 1-17.
[5] Petitioner's Exhibit No. 2, Direct Testimony of Kimberly Aliff, p. 5, lines 8-9.
[6] Cause No. 45616, Order, Ordering Paragraph 2, June 1, 2022.

necessary for fleet changeover.[7] It is unknown how the results of this investigation would affect AES Indiana's proposal in this cause. This is further discussed by OUCC Witness Roopali Sanka.

III. OUCC WITNESSES

Q: Please introduce the OUCC's witnesses in this Cause.

A: The following OUCC Witnesses provide testimony on the following issues:

Ms. Roopali Sanka describes the components of AES Indiana's proposed Public Use EV Pilot Program, the benefit/cost testing of those programs, the Commission's pending EV investigation in Cause No. 45816, and compares AES Indiana's current proposal to the DEI proposal approved in Cause No. 45616.

Mr. Brian Latham testifies regarding alternative accounting and ratemaking treatment and attendant customer impacts should the Commission approve AES Indiana's proposal.

IV. BENEFIT/COST TESTING

Q: Does Indiana statute address the information that must be included in a utility's request for approval of an EV pilot program?

A: Yes. Ind. Code § 8-1-43-8(b) includes a list of what must be included in an electric utility's request for EV Pilot Program approval. Particularly, Ind. Code §§ 8-1-43-8(b)(2), (3), and (6) states a proposal must include "[a] full description of objective evaluation criteria that will be used to measure the success or usefulness of the pilot program," "[a]n estimate of all costs of the pilot program, including an estimate of the costs to be borne by participating customers of the electric utility,

[7] Cause No. 45816, Docket Entry issued on April 4, 2023.

nonparticipating customers of the electric utility, and the general public, as applicable," and "[s]upporting evidence as to why the pilot program is in the public interest, including information as to how participating customers of the electric utility, nonparticipating customers of the electric utility, and the general public may be affected by the pilot program."

Q: Did Petitioner meet these statutory requirements?

A: No. As explained below, Petitioner did not provide a full description of the objective criteria to measure the success or usefulness of the pilot program, did not provide a sufficient cost estimate of the pilot program, and did not provide sufficient supporting evidence as to why the pilot program is in the public interest.

Q: Did Petitioner analyze the impact of the EV Portfolio on residential customers in comparison to commercial and industrial ("C&I") customers?

A: Yes. In response to Citizens Action Coalition data request 1-17,[8] Petitioner includes the following table showing the impact of the EV portfolio by sector:

Sector	TRC	PCT	RIM
Residential	2.77	2.11	1.00
C&I	4.81	2.49	1.32
Total (Excl. CI Tariff)	4.36	2.44	1.25

Note, for a program to generate savings for customers who are not participating in the program, the RIM score must be greater than 1.00.[9] Based on Petitioner's

[8] OUCC Attachment JWH-1, Petitioner's Response to CAC DR 1-17.
[9] California Standard Practice Manual – Economic Analysis of Demand-Side Programs and Projects, October 2001, p. 14.

estimates, there will be no savings for non-participating residential customers under the RIM test. Given Petitioner did not assess the cost-effectiveness of the first year, which Petitioner's witness Edward Schmidt indicated would have higher administrative costs and lower participation, the program will likely increase electric rates of non-participating customers without the corresponding benefits.

Q: How are potential savings estimated for the EV programs?

A: Unlike Demand Side Management ("DSM") programs that try to reduce energy and demand usage, EV programs seek to reduce costs by managing the timing of when vehicles are charged. In addition, by increasing energy sales to charge EVs, the Petitioner's fixed costs will be spread over more sales to potentially lower costs for all customers. Estimating savings involves comparing the level of charging occurring on-peak in the absence of the program, to how often EVs are charged on-peak with the program. The avoided costs are estimated as the difference in price of on-peak charging minus the price of off-peak charging. According to Petitioner's data response, "For the base case and all unmanaged charging scenarios, 62.5% of charging was assumed to occur during the on-peak period based upon the Pennsylvania TRM coincidence factors of 62.5%."[10] The prices used for on-peak and off-peak avoided costs are provided by Mr. Schmidt in attachment EJS-2.

Q: How did AES Indiana evaluate the EV Portfolio's cost effectiveness?

A: Petitioner worked with MCR Performance Solutions ("MCR") to model cost effectiveness using tests from the California Standard Practice Manual. These tests are commonly used to assess cost effectiveness of DSM programs. The tests include

[10] OUCC Attachment JWH-1, Petitioner's Response to OUCC DR 4-8.

the Rate Impact Measure ("RIM") Test, the Total Resource Cost ("TRC") Test, the Participant Cost Test ("PCT"), and the Societal Cost Test ("SCT").[11] Typically, as in the approval of Petitioner's previous DSM program in Cause No. 45370, cost effectiveness tests are run over the program life to derive a score for the entire portfolio during the life of the program.[12]

Q: Did MCR use each program year's benefits and costs in determining the cost effectiveness for the life of the programs?

A: No. In this case, MCR did not determine cost effectiveness for the life of the Pilot Program; rather it determined cost effectiveness using only the second year, 2025. According to Mr. Schmidt:

> MCR conducted its cost effectiveness modeling at the program level for the second year of program implementation, assumed to be 2025. We modeled the second year since it represents the first steady-state year of implementation, noting that the first year of implementation, or ramp-up year, typically has a higher than steady-state level of administrative costs and a lower level participation as program operations begin.[13]

Q: Why is AES Indiana's proposal to include only one program year to calculate cost effectiveness problematic?

A: Excluding the first program year departs from typical DSM cost effectiveness testing and inflates the benefit/cost ratio of the portfolio, thus obscuring the impact of the portfolio over the life of the program on customers.

[11] Petitioner's Exhibit No. 3, Direct Testimony of Edward Schmidt, p. 2, lines 11-13.
[12] Cause No. 45370, Petitioner's Exhibit. No. 3, Direct Testimony of Erik Miller, p. 6, lines 10-11.
[13] Schmidt Direct, p. 8, lines 8-13.

Q: Was the cost effectiveness modeling used by Petitioner included in the Case-in-Chief?

A: No. The modeling was only described by Mr. Schmidt, and inputs were provided in EJS-1. The OUCC requested the calculations and inputs for the cost effectiveness modeling in Microsoft Excel format, and in response Petitioner wrote "The model is the proprietary property of MCR and MCR will make the model available to view via a meeting with the OUCC."[14] On April 19, 2023, the OUCC met with MCR, but no spreadsheet was provided to the OUCC for review. Without checking the specific calculations used for benefit/cost testing, the OUCC is unable to properly assess the impacts of the EV Portfolio.

Q: Were the Petitioner's calculations used to determine the budget included in the Case-in-Chief?

A: No. AES Indiana presented an overview of the budget which included overall costs per program per year. In Data Request 4-1, the OUCC requested all inputs and assumptions used to determine the budgets for all the components of the EV Portfolio, as shown in Attachment ZE-1.[15] In response, Petitioner provided workpaper ZE-1.[16] However, this workpaper only included the same budget information as included in Mr. Elliot's direct testimony and did not provide any information to support the projected budget amounts. Additionally, Petitioner notes in another data response that "The projected budgets for the EVSE Rebate program are based on the Company's recent experience in Ohio,"[17] but provides no additional support. As with the previously mentioned cost-effectiveness modeling,

[14] OUCC Attachment JWH-1, Petitioner's Response to OUCC DR 4-6.
[15] Elliot Direct, Attachment ZE-1.
[16] OUCC Attachment JWH-1, Petitioner's Response to OUCC DR 4-1.
[17] OUCC Attachment JWH-1, Petitioner's Response to OUCC DR 4-3.

Petitioner did not provide sufficient support for its proposed budget amounts. Therefore, the OUCC is unable to properly assess the final budget amounts in the absence of information about the inputs, such as AES Indiana's experience in Ohio and the calculations performed to reach the budget breakdown provided in Workpaper ZE-1.

Q: How did AES Indiana determine the amount of charging that would take place on-peak?

A: Peak kW coincidence was determined using the Pennsylvania Technical Resource Manual ("Pennsylvania TRM"). AES Indiana referred to the Pennsylvania TRM, section 3.11.3 "High Frequency Battery Chargers," which applies to "industrial high frequency battery chargers, used for industrial equipment such as fork lifts, replacing existing SCR (silicon controlled rectifier) or ferroresonant charging technology."[18] The portion of table 3-209 AES Indiana used to determine Peak kW coincidence is reproduced below:

Term	Unit	Values	Source
CF, Coincidence Factor	*Decimal*	Default for single shift or 2-shift: 0.25 Default for 3-shift or 4-shift: 1	7

The values for a single shift (8 hours) or 2 shifts (16 hours) reflect that for devices used during those shifts, 25% of charging for such devices is considered on-peak. While 3- and 4-shift (24-hour operation), 100% of charging is considered on-peak.

[18] Pennsylvania Technical Resource Manual, Volume 3, pp. 289-292, found at: https://www.puc.pa.gov/filing-resources/issues-laws-regulations/act-129/technical-reference-manual/.

To arrive at the Peak kW coincidence value of 62.5% given in EJS-1, Petitioner simply averaged 25% and 100%.[19]

Q: Is there anything else you would like to mention?

Yes. The Pennsylvania TRM's source for estimating the coincidence factor of high frequency battery chargers did not analyze chargers for electric vehicles. Appendix E of that report describes the two parts of the study. For the first part, the report states, "Excluded from the scope of Part 1 are battery charger system for on-road full-function electric or plug-in hybrid-electric vehicles," and goes on to state the second part of the study does not cover "On-road full-function electric or plug-in hybrid-electric vehicles."[20]

Q: What does your analysis conclude?

Given the study used by the Pennsylvania TRM did not include electric vehicles, and the fact Petitioner did not attempt to distinguish the charging usage of businesses that operate for 8 to 16 hours from those that operate for 24 hours, a 62.5% coincident factor is inappropriate for estimating the peak usage of EV chargers in the absence of an EV program.

V. CONCLUSIONS & RECOMMENDATIONS

Q: Please summarize your recommendations to the Commission in this cause.

A: I recommend the Commission deny the EV Portfolio as proposed by Petitioner as Petitioner did not meet the statutory requirements in Ind. Code § 8-12-43-8. Specifically, Petitioner's proposal should be rejected due to its lack of support for

[19] OUCC Attachment JWH-1, Petitioner's Response to OUCC DR 5-1(b).
[20] Pacific Gas & Electric, "Emerging Technologies Program Application Assessment Report #0808", Industrial Battery Charger Energy Savings Opportunities. p. 22.

proposed program costs. Despite being issued multiple data requests, Petitioner did not provide sufficient support for its proposed budget amounts. Therefore, the OUCC was unable to evaluate the budget and cost-effectiveness modeling based on the information available to it. Potential savings were overestimated due to the assumption that 62.50% of charging would take place on-peak without the Portfolio. Furthermore, even if the savings that Petitioner projected were achieved, AES Indiana's estimates indicate there will not be savings for non-participating residential customers. The bulk of program spending is devoted to C&I customers, though these costs were allocated to all customer classes based on allocation factors that do not reflect how the program costs are allocated. The proposed Portfolio is also longer and more expensive than that approved for DEI last year. Finally, approval of the Portfolio would be premature because the Commission is addressing issues relevant to this case in its pending investigation, Cause No. 45816. Given these considerations, the Commission should deny the EV Portfolio as proposed.

Q: Does this conclude your testimony?

A: Yes.

APPENDIX A
QUALIFICATIONS OF JOHN W. HANKS

Q: Please describe your background and experience.

A: I graduated from Indiana University-Purdue University Indianapolis with a Bachelor of Arts in Quantitative Economics, with minors in math and philosophy. I began my career with the OUCC in 2022 as a Utility Analyst II, focusing on economics and finance in the Electric Division. In the summer of 2022, I attended the Institute of Public Utilities' Annual Program on Regulatory Fundamentals. In fall of 2022, I participated in the Indiana Energy Conference organized by Indiana Industrial Energy Consumers. In March of 2023, I completed a 12-week course with Scott Hempling about Regulating Utility Performance.

Q: Have you previously filed testimony in other Commission proceedings?

A: Yes.

Indianapolis Power & Light Company
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AES Indiana Responses to CAC DR Set 1

Data Request CAC DR 1 - 17

Has AES Indiana analyzed the costs and benefits of its EV Portfolio for residential customers specifically in comparison to non-residential customers specifically? If yes, please provide a copy of such analysis and explain its key findings. If no, please explain why AES Indiana has not conducted such an analysis.

Objection:

Response:
Yes. AES Indiana witness Schmidt completed a cost and benefit analysis, which is described in his testimony. Results broken down by customer segment indicate that the portfolio is cost effective in all sectors and are as follows:

Sector	TRC	PCT	RIM
Residential	2.77	2.11	1.00
C&I	4.81	2.49	1.32
Total (Excl. CI Tariff)	4.36	2.44	1.25

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 45843
AES Indiana Responses to OUCC DR Set 4

Data Request OUCC DR 4 - 1

Please refer to the direct testimony of Zachary Elliott, Attachment ZE-1. Please provide all inputs and assumptions used to determine the budgets for all the components of the EV Portfolio. Please provide all information in excel format with formulae intact.

Objection:
AES Indiana objects to the request on the grounds and to the extent the request is overly broad and unduly burdensome, particularly to the extent the request seeks "all" inputs and assumptions. Subject to and without waiver of the foregoing objection, AES Indiana provides the following response.

Response:
AES Indiana Witness Elliot sponsored Petitioner's Workpaper ZE-1, which provides a breakdown of budgets and general cost categories for each proposed program by year.

AES Indiana
Electric Vehicle Portfolio
Petitioner's Workpaper ZE-1

a.

Public Use EV Pilot Program	Y1	Y2	Y3	Total
Bi-directional Charging Pilot	$610,000	$610,000	$610,000	$1,830,000
EVSE Rebates	$1,650,000	$1,800,000	$2,100,000	$5,550,000
EVSE Rebates for Disadvantaged Communities	$490,000	$610,000	$780,000	$1,880,000
Fleet Solutions	$1,000,000	$1,300,000	$1,900,000	$4,200,000
Subtotal A.	$3,750,000	$4,320,000	$5,390,000	$13,460,000

Alternative Rates, Tariffs, Pricing Structures	Y1	Y2	Y3	Total
Residential Managed Charging	$175,000	$155,000	$220,000	$550,000
Off-Peak Incentive	$175,000	$155,000	$220,000	$550,000
C&I Managed Charging	$155,000	$115,000	$130,000	$400,000
Rate EVP	$0	$0	$0	$0
Rate DCFC	$0	$0	$0	$0
Subtotal B.	$505,000	$425,000	$570,000	$1,500,000

AES Admin, Outreach, Evaluation	Y1	Y2	Y3	Total
Residential	$250,000	$250,000	$250,000	$750,000
C&I	$150,000	$150,000	$150,000	$450,000
Subtotal C.	$400,000	$400,000	$400,000	$1,200,000

Total Program Operating and Capital Costs	Y1	Y2	Y3	Total
Residential	$600,000	$560,000	$690,000	$1,850,000
C&I	$4,055,000	$4,585,000	$5,670,000	$14,310,000
Total (A + B + C)	$4,655,000	$5,145,000	$6,360,000	$16,160,000

Tariff EVSE*	Y1	Y2	Y3	Total
C&I	$1,850,000	$3,500,000	$5,200,000	$10,550,000
Subtotal D.	$1,850,000	$3,500,000	$5,200,000	$10,550,000

*Participant only funded; excluded from Total Program Operating and Capital Costs

Residential Managed Charging

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation	100	300	500	900	
Projected Rebate Budget	$20,000	$60,000	$100,000	$180,000	Opex
Projected Incentive Budget	$5,000	$20,000	$45,000	$70,000	Opex
Projected Admin Budget	$150,000	$75,000	$75,000	$300,000	Opex
Total Budget	$175,000	$155,000	$220,000	$550,000	

Off-Peak Incentive

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation	100	300	500	900	
Projected Rebate Budget	$20,000	$60,000	$100,000	$180,000	Opex
Projected Incentive Budget	$5,000	$20,000	$45,000	$70,000	Opex
Projected Admin Budget	$150,000	$75,000	$75,000	$300,000	Opex
Total Budget	$175,000	$155,000	$220,000	$550,000	
Res Outreach/Labor/Eval	$250,000	$250,000	$250,000	$750,000	Opex

C&I Managed Charging

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation (ports)	100	200	300	600	
Projected Rebate Budget	$0	$0	$0	$0	
Projected Incentive Budget	$5,000	$15,000	$30,000	$50,000	Opex
Projected Admin Budget	$150,000	$100,000	$100,000	$350,000	Opex
Total Budget	$155,000	$115,000	$130,000	$400,000	

EVSE Rebates

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation	88	100	118	306	
Projected Rebate Budget	$1,500,000	$1,700,000	$2,000,000	$5,200,000	Opex
Projected Admin Budget	$150,000	$100,000	$100,000	$350,000	Opex
Total Budget	$1,650,000	$1,800,000	$2,100,000	$5,550,000	

EVSE Rebates for Disadvantaged Communities

	2023	Y2	Y3	Total	Expenditure Type
Projected Participation	20	30	40	90	
Projected Rebate Budget	$340,000	$510,000	$680,000	$1,530,000	Opex
Projected Admin Budget	$150,000	$100,000	$100,000	$350,000	Opex
Total Budget	$490,000	$610,000	$780,000	$1,880,000	

Bi-directional Charging Pilot

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation	1	1	1	3	
Projected Equipment Budget	$400,000	$400,000	$400,000	$1,200,000	Capex
Projected Installation Budget	$150,000	$150,000	$150,000	$450,000	Capex
Projected Admin Budget	$60,000	$60,000	$60,000	$180,000	Opex
Total Budget	$610,000	$610,000	$610,000	$1,830,000	

Fleet Solutions

	Y1	Y2	Y3	Total	Expenditure Type
ed Participation (# of customers)	15	20	30	65	
Projected Participation (# ports)	375	500	750	1625	
Projected SaaS Costs	$100,000	$100,000	$100,000	$300,000	Opex
Projected Report Costs	$750,000	$1,000,000	$1,500,000	$3,250,000	Opex
Projected Implementation Costs	$150,000	$200,000	$300,000	$650,000	Opex
Total Budget	$1,000,000	$1,300,000	$1,900,000	$4,200,000	

Tariff EVSE

	Y1	Y2	Y3	Total	Expenditure Type
Projected Participation	50	100	150	300	
Projected Equip Budget	$850,000	$1,700,000	$2,550,000	$5,100,000	Capex
Projected Install Budget	$850,000	$1,700,000	$2,550,000	$5,100,000	Capex
Projected Admin Budget	$150,000	$100,000	$100,000	$350,000	Opex
Total Budget	$1,850,000	$3,500,000	$5,200,000	$10,550,000	
C&I Outreach/Labor/Eval	$150,000	$150,000	$150,000	$450,000	Opex

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 45843
AES Indiana Responses to OUCC DR Set 4

Data Request OUCC DR 4 - 3

EVSE rebates
a. See response to CAC DR 1-10. "AES Indiana did not prescribe EVSE eligibility criteria, specific rebate amounts, or penalties for opting out of programs (e.g., C&I Managed Charging) as part of this case. AES Indiana will issue a competitive request for proposals for all programs approved in this case. Program terms and conditions, cap amounts, and other eligibility criteria will be developed and implemented pursuant to contracting with selected implementation contractor(s)."
b. How did AES Indiana develop a program budget for EVSE rebates without determining specific rebate amounts and program terms and conditions?

Objection:

Response:
The projected budgets for the EVSE Rebate program are based on the Company's recent experience in Ohio. AES Indiana used average per port rebate amounts for level 2 and DCFC equipment to develop the rebate budget. For more information on the Company's experience in Ohio, including cap amounts, program terms and conditions, and application materials, please visit https://www.aes-ohio.com/evse-rebate-program.

As part of AES Indiana's proposed EV Portfolio, the Company is seeking to better understand EVs' impact on its system and actual costs to deliver cost effective EV related programming. Goals and key evaluation criteria for the EVSE Rebates program are included in the testimony of Witness Elliot.

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 45843
AES Indiana Responses to OUCC DR Set 4

Data Request OUCC DR 4 - 6

Please refer to the direct testimony of Edward Schmidt, p. 3, table 1. Please provide all detailed calculations and inputs for the Cost Effectiveness Testing Results. Please provide the information in excel format with all formulae intact.

Objection:
AES Indiana objects to the Request on the grounds and to the extent the request seeks information that is confidential, proprietary, competitively sensitive and/or trade secret. Subject to and without waiver of the foregoing objections, AES Indiana provides the following response.

Response:
The model is the proprietary property of MCR and MCR will make the model available to view via a meeting with the OUCC.

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 45843
AES Indiana Responses to OUCC DR Set 4

Data Request OUCC DR 4 - 8

Please refer to the direct testimony of Edward Schmidt, Attachment EJS-1, Table EJS 1.1 Economic Inputs.
a. How was the value for Peak kW coincidence determined?
b. Please describe any other sources, if any, of information considered to determine the amount of charging that is estimated to take place during the peak billing period.
c. Why was the Pennsylvania TRM used as opposed to another state?

Objection:

Response:

a. The value for Peak kW coincidence was determined using the Pennsylvania TRM. See Pennsylvania TRM (Table 3-209 of Section 3.11.3). https://www.puc.pa.gov/filing-resources/issues-laws-regulations/act-129/technical-reference-manual/
b. For the base case and all unmanaged charging scenarios, 62.5% of charging was assumed to occur during the on-peak period based upon the Pennsylvania TRM coincidence factor of 62.5% and visually approximate consistency with AESI load curves for loads billed under its residential and small commercial rates.
c. The Pennsylvania TRM was used because it is current, MCR is knowledgeable regarding its content, and is visually consistent with AESI load curves for loads billed under its residential and small commercial rates.

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 45843
AES Indiana Responses to OUCC DR Set 5

Data Request OUCC DR 5 - 1

Please refer to AES Indiana's response to OUCC DR 4-8.
a. The section of the Pennsylvania TRM referenced in the response concerns "high frequency battery chargers." This section states:
This measure applies to industrial high frequency battery chargers, used for industrial equipment such as fork lifts, replacing existing SCR (silicon controlled rectifier) or ferroresonant charging technology. They have a greater efficiency than silicon controlled rectifier (SCR) or ferroresonant chargers.
The baseline equipment is a SCR or ferroresonant battery charger system with minimum 8-hour shift operation five days per week. The energy efficient equipment is a high frequency battery charger system with a minimum power conversion efficiency of 90% and 8-hour shift operation five days per week.
Is it appropriate to use this standard for peak kW coincidence? If yes, please explain fully.
b. The values for coincidence factor in this section of the Pennsylvania TRM are: "Default for single shift or 2-shift: 0.25 Default for 3-shift or 4-shift: 1". Is the peak kW coincidence value of 62.50% referenced in Attachment EJS-1 a simple average of the values from the Pennsylvania TRM?
i. If yes, why is this the appropriate methodology and value to determine peak kW coincidence?
ii. If no, how was the 62.50% determined and why is that the appropriate methodology to determine the value?
c. Please provide an explanation of and information on the specific load curves referenced in the response.
d. How is the peak kW coincidence value of 62.50% "visually consistent" with AES Indiana load curves for loads billed under its residential and small commercial rates?

Objection:

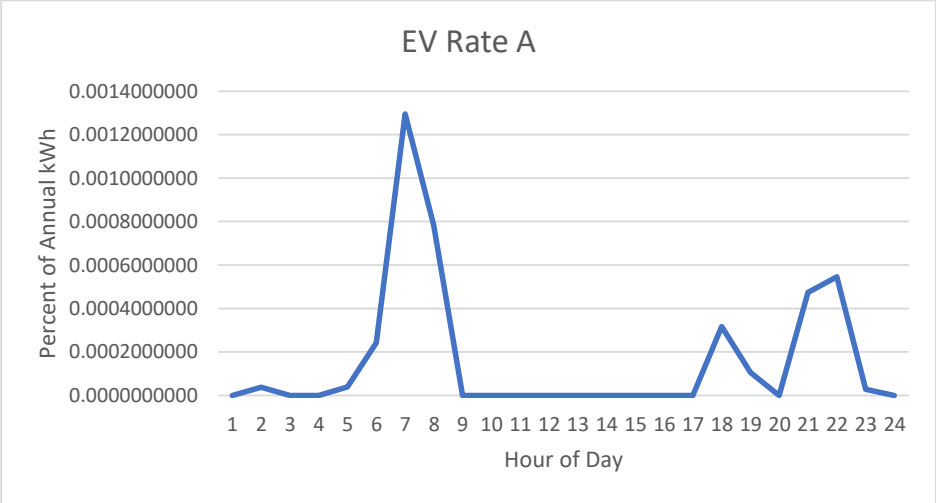
Response:

a. In selecting the coincidence factor used, MCR researched whether there are any published values for peak coincidence of EV charging that are reasonably consistent with actual load patterns of AES Indiana and regionally, especially those related to EV charging. Ideally the coincidence factor selected for use in the AES Indiana modeling would be from a TRM used in a jurisdiction proximate to Indiana. The Pennsylvania TRM's entry for high frequency chargers emerged as related to vehicle battery charging and proximate. Since our objective is to understand within what range of hours during the day charging load peaks, not what type of charging or charger and not instantaneous system peak coincidence, the high frequency charger entry from Pennsylvania is reasonable.

b. To obtain a perspective on residential, small commercial, and larger fleet operations, taking the average of the Pennsylvania TRM coincidence factors for 1-2 shift and 3-4 shift operations is appropriate since this average considers loads over a full 24-hour day.

c. MCR examined two sets of load curves in assessing (visually) the reasonableness of using the Pennsylvania TRM 62.5% coincidence:
   1. Four illustrative weekday EV-charging load shape graphs for AES Indiana, which are drawn from actual AES Indiana 8,760-hour annual load data for EV-related rates, to indicate what loads may look like when managed because of those of the AES Indiana programs encourage or force management of charging.
   2. Two illustrative weekday EV-related load shapes drawn from 8760-hour annual EV charging load data developed previously for AES Indiana by Navigant Consulting (now Guidehouse) using regional data, to indicate what unmanaged charging loads may look like.

   In addition, as we consider this data request, we examined the actual MW of supply that cleared the MISO Central Region on April 13, 2023, to indicate what the overall system load may look like. The load curves examined are:



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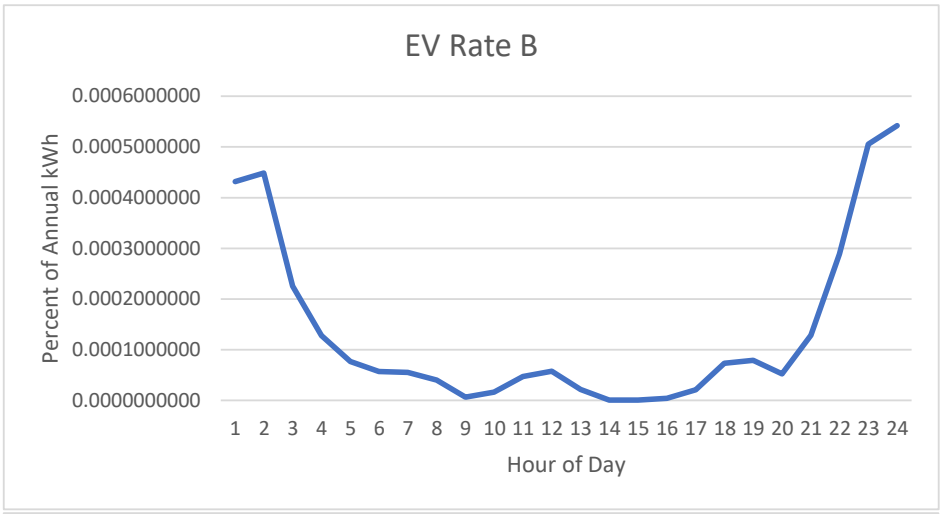

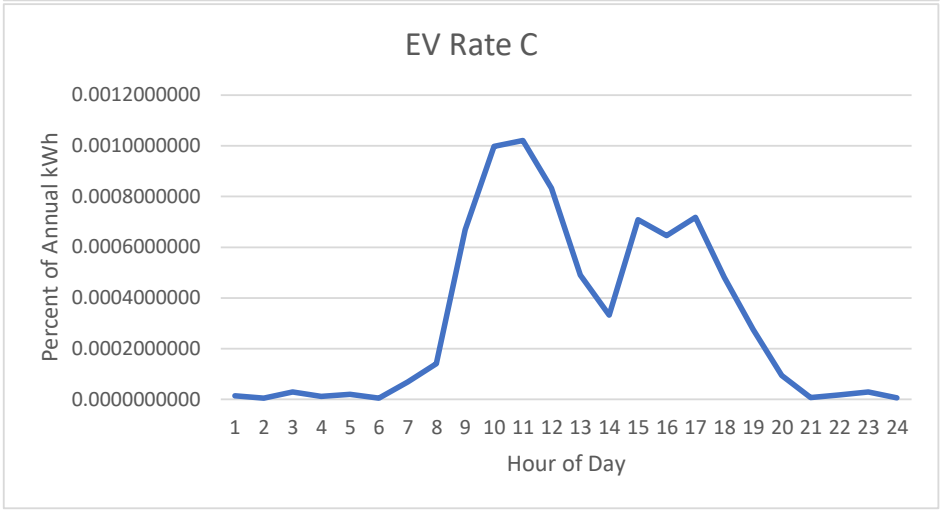

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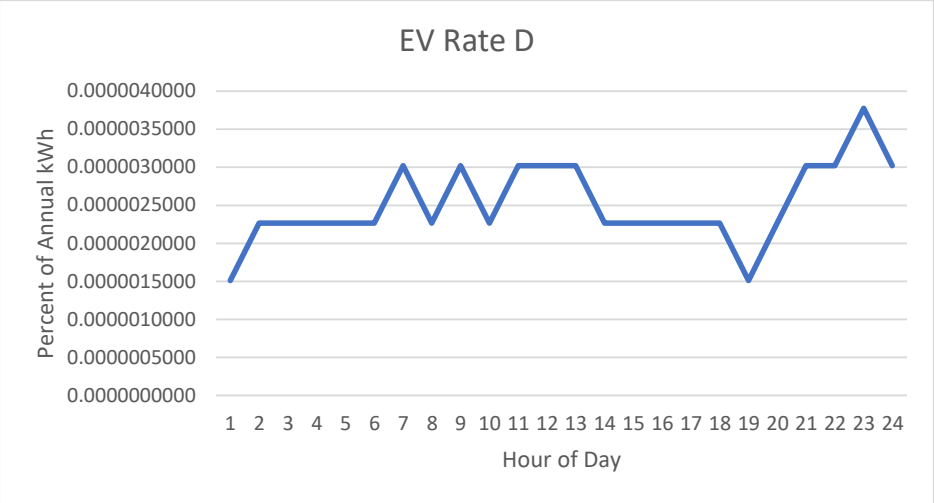

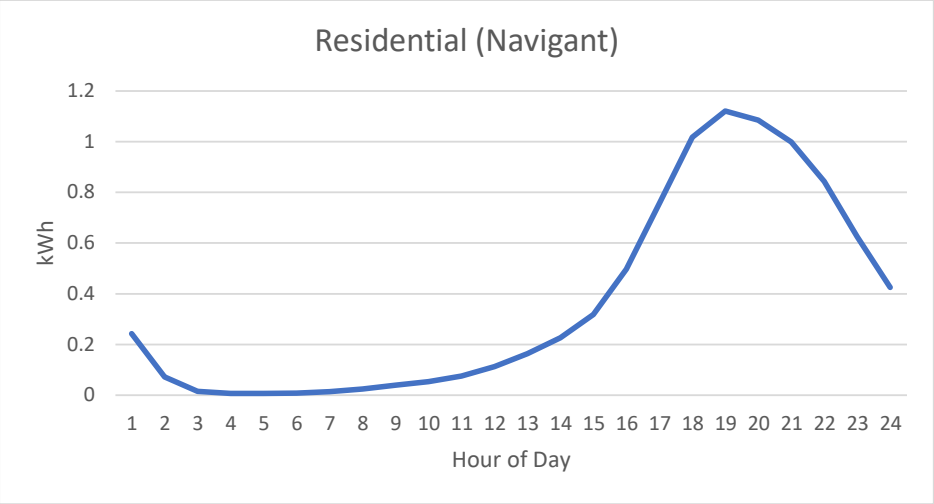

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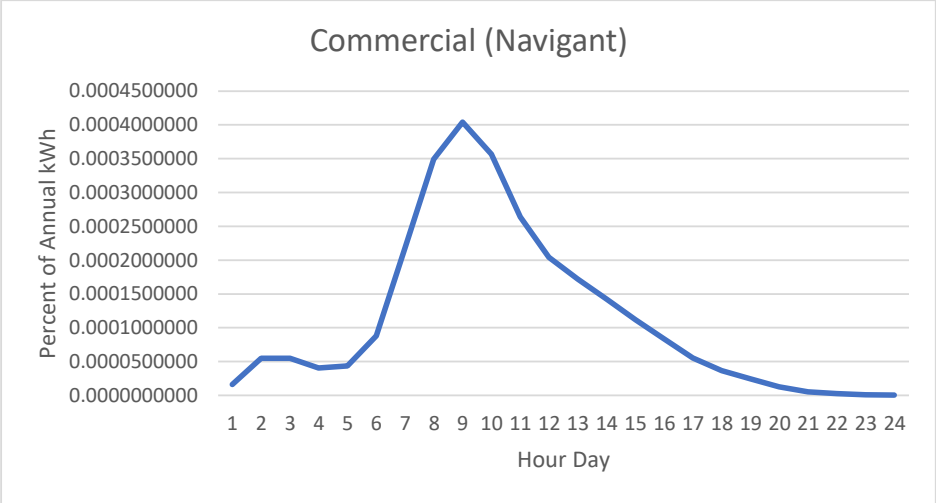

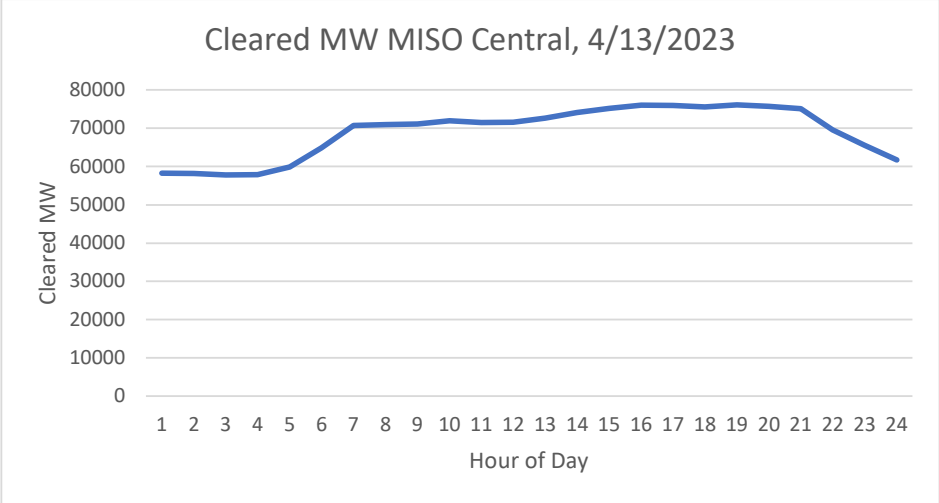

d. Looking at the graphs, MCR concluded that most load, including EV charging load, appears to occur between approximately 8:00AM and 10:00PM, which approximately corresponds to the peak periods contemplated by AES Indiana for the proposed EV programs. Given the above discussion and graphics, the 62.5% coincidence factor MCR decided upon for the AES Indiana EV program cost effectiveness analysis is a TRM-published value for a jurisdiction proximate to Indiana that is visually consistent with the AES Indiana actual data.

AFFIRMATION

I affirm, under the penalties for perjury, that the foregoing representations are true.

John W. Hanks
Utility Analyst II
Indiana Office of Utility Consumer Counsel
Cause No. 45843
AES Indiana

April 27, 2023
Date

CERTIFICATE OF SERVICE

This is to certify that a copy of the ***OUCC's Public's Exhibit No. 1, Testimony of John W. Hanks*** has been served upon the following parties of record in the captioned proceeding by electronic service on April 27, 2023.

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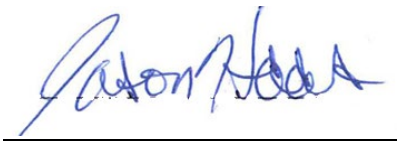

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