# REBUTTAL TESTIMONY OF LANG W. REYNOLDS
# DIRECTOR OF ELECTRIC TRANSPORTATION
# DUKE ENERGY CAROLINAS, LLC
# ON BEHALF OF DUKE ENERGY INDIANA, LLC
# CAUSE NO. 45253 S2
# BEFORE THE INDIANA UTILITY REGULATORY COMMISSION

## I. INTRODUCTION

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Lang W. Reynolds, and my business address is 550 South Tryon Street, Charlotte, North Carolina.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

A. I am employed as Director of Electric Transportation for Duke Energy Carolinas, LLC, a utility affiliate of Duke Energy Indiana, LLC ("Duke Energy Indiana," or "Company") and an indirect subsidiary of Duke Energy Corporation ("Duke Energy").

**Q. ARE YOU THE SAME LANG REYNOLDS THAT PRESENTED DIRECT TESTIMONY IN THIS PROCEEDING?**

A. Yes, I am.

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

A. I am responding to the testimony of the Indiana Office of Utility Consumer Counselor ("OUCC") and ChargePoint, Inc. ("ChargePoint"). Specifically, my rebuttal testimony will respond to the testimony of Ms. Lauren M. Aguilar and Ms. Anne T. Smart.

## II. DUKE ENERGY INDIANA'S RESPONSE TO INTERVENOR TESTIMONY

**Q. WHY DO YOU FEEL COMPELLED TO RESPOND TO MS. AGUILAR'S TESTIMONY?**

A. The main driver for Ms. Aguilar's recommendations are her personal opinion unaccompanied by any real analysis, evidence, or input from electric vehicle ("EV") owners or customers.[1] As such, I felt it was necessary to provide further discussion to clarify the Company's proposal and provide the Commission with additional information. The entire purpose of Duke Energy Indiana's Electric Transportation Pilot ("ET Pilot") proposal is to gather data, in a collaborative manner, while fostering further growth of the nascent EV market in Indiana. Ms. Aguilar's recommendation would prevent the Company and stakeholders from gathering this data, thus placing customers at a disadvantage.

**Q. DO YOU AGREE WITH MS. AGUILAR'S ASSERTION THAT THE PROPOSED ET PILOT DOES NOT CONTAIN "MEASUREMENTS OF SUCCESS"? PLEASE EXPLAIN.**

A. No. As I previously stated above and in my direct testimony, one objective of the ET Pilot is to obtain comprehensive data relating to the growth of EV usage on the Duke Energy Indiana system in order to create future programs and evaluate the impacts, costs, and benefits of different types of EVs. Duke Energy Indiana

[1] See Petitioner's Exhibit 3-A (LWR). Specifically, the OUCC's responses to Duke Energy Indiana's data requests 1.7, and 1.9 through 1.11.

sees a future with greater adoption of EVs. Ms. Aguilar even acknowledges there is "momentum towards electrification."[2] Gathering data in the early stages of this momentum is critical in providing the Company the ability to effectively plan and develop the system and customer offerings. Furthermore, I provided in Petitioner's Exhibit 1-B (LWR) with my direct testimony an extensive list of specific metrics on which the Company will be gathering data during the ET Pilot. These metrics, along with the costs and benefits to participants, non-participants, and the utility system will all inform the Company's approach to future permanent programs, which is ultimately the purpose for all pilot programs.

**Q. WHAT ARE YOUR THOUGHTS ABOUT THE CONCERNS MS. AGUILAR EXPRESSES ABOUT THE MANNER IN WHICH DUKE ENERGY INDIANA IS SELECTING AND LIMITING CUSTOMER PARTICIPATION IN THE ET PILOT?**

A. Ms. Aguilar's concerns are misplaced. Duke Energy Indiana has proposed customer participation limits in the DC Fast Charge, school bus, residential, and commercial programs in order to control program costs and ensure the programs are subscribed with expediency. Thus far, Duke Energy has widespread customer interest in the proposed programs including urban, suburban, and rural areas of the service territory. A good example of customer diversification can be seen in the school bus program. Currently, the Company is working with Monroe

[2] Aguilar Testimony p. 3, lines 19-20.

Community Schools (urban), Carmel Clay Schools (urban), Bartholomew Community Schools (suburban), and Delphi Community (rural). All of these school corporations were awarded in the first round of IDEM VW funding. In order to provide insight into the customer diversification, ET Pilot data will indicate geographic EV adoption and diversification across our service territory. This data will be used to formulate a final EV program offer that is attractive to all customers, regardless of location. Any further prospective customer participant requirements (geography, demographics, etc.) could possibly be discriminatory and would also act to slow the ET Pilot by requiring overly specific criteria for participation.

**Q. WHY DO YOU TAKE ISSUE WITH MS. AGUILAR'S DISCUSSION OF PUBLIC CHARGING STATIONS IN INDIANA?**

A. When discussing "public charging stations," a delineation must be made between Level 2 and DC Fast Charging public charging stations due to the difference in required capital investment. Level 2 charging is rated at 19.2kW or lower, most commonly single phase. DC Fast Charging is typically rated at 50kW or higher and requires 3 phase power. The level 2 public charging market is more established in Indiana, as noted by Ms. Aguilar. However, the number of publicly accessible, open-standard (*i.e*. non-Tesla specific) DC Fast Charging stations in Indiana is declining.[3] As of June 2019, there were 17 publicly available open-

[3] Alternative Fuels Data Center https://afdc.energy.gov/stations/#/analyze?region=US-IN&fuel=ELEC&ev_levels=dc_fast

standard DC Fast Charging locations in Indiana as originally provided in the Company's data response, Attachment OUCC 7.3-A. As of November 2019, there are now only 11 publicly available 24/7 (non-Tesla) fast charge locations as shown in Petitioner's Exhibit 3-B (LWR).

Ms. Aguilar confuses the types of charging levels by referencing SemaConnect and Blink; both of whom only operate Level 2 public charging stations in Indiana, not DC Fast Charging stations.

**Q. IS MS. AGUILAR'S CONCERN ABOUT UTILITY OWNERSHIP VALID?**

A. No. Currently no electric utilities are involved with ongoing ownership and operation of public DC Fast Charging stations in Indiana. Electric Utilities are uniquely positioned to help increase the number of DC Fast Charge Stations to support increased EV adoption across the state and realize benefits for all customers. Additionally, the Company's proposal will help address the current lack of DC Fast Charging in rural communities across the Duke Energy Indiana service territory. Stations are currently located in urban settings (Indianapolis, Ft. Wayne, Lafayette, Terre Haute, Clarksville, and Aurora). Expanding DC Fast Charging access along highway corridors and in more rural areas will enable cross-state EV driving in ways not currently possible today. Furthermore, Duke Energy Indiana is not aware of any other 3rd party DC Fast Charge deployments planned in Indiana, except for Electrify America and Tesla.

Utility ownership of the network created by the proposed ET Pilot is critical because the Company is uniquely positioned to operate DC Fast Charging

infrastructure for public benefit over the long term. Alternative structures for utility investment in DC Fast Charging infrastructure do not provide the necessary safeguards to ensure that investments made on behalf of customers are well maintained and publicly accessible for the full life of the asset. Per (Page 6 lines 15-16) above, the declining availability of DC Fast Charging in Indiana shows that in many cases third-party party operators are not capable of maintaining DC Fast Charge infrastructure for public benefit over the long term.

**Q. IS THE PRESENCE OF ELECTRIFY AMERICA AND TESLA PROOF THE DC FAST CHARING MARKET IS DEVELOPING IN INDIANA?**

A. No. Outside of Electrify America and Tesla, there have been no new DC Fast Charging station installations in Indiana over the past 12 months. Electrify America is not a standard commercial enterprise and was in fact created to satisfy Volkswagen Group AG's settlement with US EPA over the diesel emissions cheating scandal.[4] Pursuant to the terms of the Settlement, VW is obligated to expend $2 billion to deploy EV charging stations across the US. While increasing availability of DC Fast Charging is beneficial for the EV market, installations deployed by Electrify America reflect VW's efforts to meet its Settlement obligation rather than a true commercial investment made with the expectation of a return on that investment.

[4] Consent Decree. Appendix C.
https://www.vwcourtsettlement.com/en/docs/DOJ/Approved%20Appendix%20C.pdf

Tesla deploys proprietary Supercharger stations (not compatible with non-Tesla vehicles) to facilitate the sale of Tesla electric vehicles. Tesla's Form 10-K financial report, shows their SuperCharger network operates at a cost to the enterprise, not profit[5]. While Tesla's Supercharger network has been crucial in supporting the high levels of growth in Tesla Model 3 sales, and sales of its other vehicles, the network is not sufficient to support or even compatible with mass market adoption of EVs from other manufacturers.

Based on the nuances of these two operators' DC Fast Charging business models it is inappropriate to assert that the DC Fast Charging market in Indiana is thriving or developing.

**Q. MS. AGUILAR CLAIMS THE ECONOMICS OF THE DC FAST CHARGING PROGRAM DO NOT SUPPORT THE PILOT, DO YOU AGREE? WHY OR WHY NOT?**

A. I do not agree. In point of fact, the economics of the DC Fast Charge market perfectly illustrate why this ET Pilot is urgently needed now. If DC Fast Charger installations were very profitable, there would be no need for utility investment to facilitate market growth. While DC Fast Chargers are currently unprofitable on a standalone basis, the Company has shown (Petitioner's Exhibit 1-A) that from a long-term whole system standpoint, increasing EV adoption can be beneficial for all customers. Therefore, it follows that such a limited, specific early investment

[5] Tesla 2018 US. SEC Form10-K.
https://www.sec.gov/Archives/edgar/data/1318605/000156459019003165/tsla-10k_20181231.htm

program is justified from a utility system standpoint. Extending distribution lines into sparsely populated areas would not be profitable if viewed on a standalone basis, but utilities were tasked with these efforts to ensure broader public benefits were achieved. This limited, specific deployment of DC Fast Chargers will provide similar public benefits by supporting the nascent EV market.

By establishing additional infrastructure today, future utilization will be increased. This will improve the economics over the life of the assets. It also provides the Company an avenue to collect data about the EV market in the early years, thus providing more informed offerings in the future. It is also important to note, if a third-party site host is owning, operating, and setting pricing, no revenue can potentially be credited back to customers.

**Q. MS. SMART WITH CHARGEPOINT RECOMMENDS THE COMPANY ALLOW CUSTOMERS A CHOICE IN TECHNOLOGY. IS DUKE ENERGY INDIANA ALLOWING FOR SITE HOST CHOICE IN THE DC FAST CHARGE PROGRAM? PLEASE EXPLAIN.**

A. Yes. Duke Energy Indiana will offer site hosts in the DC Fast Charge program the opportunity to select from a short list of qualified third-party fast charging hardware. The Company is currently reviewing DC Fast Charge hardware vendors through a Request for Proposal. The Company will publish a short list of approved vendors based on hardware that exceeds 100kW peak charging capacity, has both CHADeMO and CCS-1 standard fast charge plugs, is compliant with Open Charge Point Protocol (OCPP) 1.6 or higher, and selected additional

programmatic criteria. Customers participating as site hosts will have the option to select their choice of DC Fast Charge hardware.

**Q. MS. AGUILIAR INDICATES THAT UTILITIES ARE NOT BEST SUITED TO BE INVOLVED IN EV DEVELOPMENT. WHY DO YOU THINK UTILITIES, SUCH AS DUKE ENERGY INDIANA, SHOULD BE INVOLVED IN EV INFRASTUCTURE DEPLOYMENT, SUCH AS ELECTRIC SCHOOL BUSES?**

A. A utility's involvement in EV infrastructure development can have several benefits, including: increasing the pace and scale of the development; maintaining reliability, and minimizing grid impacts by coordinating existing grid investments and planning processes; leveraging existing channels to communicate with customers.

More specifically, accessing the benefits of electric school buses on a large scale will require more stakeholder resources than provided by existing government-assisted funding. For example, the Indiana VW settlement fund just awarded four school corporations $315,000 each to purchase one electric school bus (average bus cost was $421,000) in 2020 for a total of $1.26 million [6]. The proposed pilot will leverage government funding giving the school corporations an opportunity to purchase more than one electric bus, effectively realizing more benefits for more students and customers. Furthermore, an electric utility is a

[6] https://www.in.gov/idem/airquality/files/vw_trust_20190723_onroad_nonroad.pdf

critical stakeholder in any deployment of electric school buses with vehicle to grid capability.

**Q. WHAT DO YOU THINK ABOUT MS. AGUILAR'S CLAIM THAT "TIME IS NOT OF THE ESSENCE" TO OFFERING AN ET PILOT?**

A. I wholeheartedly disagree with this statement. Time IS of the essence. The EV market is developing now and delaying this program will only delay realization of the significant potential benefits of increasing EV growth to all Duke Energy Indiana customers. Preventing the Company from gathering data about the emerging EV market puts Duke Energy Indiana and its customers at a disadvantage when adapting to impacts of EVs. Additionally, time is of the essence when considering current funding opportunities that are only available for a limited time. A significant opportunity exists to leverage the available Indiana Volkswagen Settlement Environmental Mitigation Trust funding to reduce total Pilot costs and secure funding for customers pursuing other VWS applications. Duke Energy Indiana is working with customers to maximize these opportunities through the Pilot.

**Q. HOW DO YOU RESPOND TO MS. AGUILAR'S CONCERNS ABOUT DUKE ENERGY INDIANA'S PROPOSED RESIDENTIAL REBATE PROGRAM?**

A. I disagree. Based on the OUCC's response to Duke Energy Indiana's data requests 1-9 and 1-10, included in Petitioner's Exhibit 3-A (LWR), Ms. Aguilar's statements are not based on any data gathered by the OUCC or any expert studies

or analyses conducted, but are rather the result of her personal opinion. The OUCC also admits to not speaking with, or receiving any comments from, any EV owners, operators, or any other customers about the ET Pilot.[7]

**Q. WHAT IS YOUR RESPONSE TO THE CONCERNS EXPRESSED BY MS. SMART, REGARDING THE POTENTIAL FOR THE COMPANY'S PROPOSAL TO RESULT IN "CHILLING PRIVATE INVESTMENT"?**

A. Ms. Smart's concerns are misplaced. Duke Energy Indiana's proposed ET Pilot intends to facilitate the development of a competitive DC Fast Charge market throughout our service territory by working with customers to install DC Fast Chargers in locations beneficial to the market as a whole. This will require the Company to be mindful of already positioned third-party DC Fast Charging locations and position locations in a manner to facilitate cross-state EV travel not currently practical today. Moreover, Duke Energy Indiana is well positioned to invest in areas of our service territory that might otherwise be avoided by third-parties, such as rural Indiana. This expansion of DC Fast Charging will support EV market growth, leading to a larger future market for all EV charging service providers.

As discussed in my direct testimony Duke Energy Indiana has committed to install and operate the fast charge stations for a minimum of 36 months. At the end of the 36 months, an appropriate structure to ensure the network remains

[7] See Petitioner's Exhibit 3-A (LWR), Questions 1-12 and 1-13.

operational will be presented. This structure may include a permanent program, disposition of the charging assets to a third party, or another option. Duke Energy Indiana is open to working with customers to identify the best DCFC market solution. Such a review of the program structure after 36 months clarifies that Duke Energy Indiana is not seeking to determine the structure of EV charging programs over the long term with this proposal and is open to different structures in the future pending market development.

**Q. DO YOU AGREE WITH MS. SMART'S CRITICISM OF THE COMPANY'S PROPOSED FAST CHARGE FEE? WHY OR WHY NOT?**

A. No. The proposed Fast Charge Fee is an effective and fair way to cultivate the DC Fast Charge market regardless if the end-user is charged by kWh, time, or flat fee. The calculation as shown in Duke Energy Indiana's Attachment CP 2.12-A in response to ChargePoint's Data Request (Petitioner's Exhibit 3-C(LWR)) illustrates that an equivalent per kWh rate for each station is calculated and then averaged across the state. The input values used for this calculation are set by the limited existing DC Fast Charge market, not Duke Energy Indiana. It is important to note that the Company intends to review and discuss pricing data, including the Fast Charge Fee, through the collaborative process.

**Q. DO YOU AGREE WITH MS. SMART'S RECOMMENDATION THAT ENABLING SITE HOST CONTROL OF CHARGING STATIONS WILL STIMULATE INNOVATION, COMPETITION, AND CUSTOMER CHOICE?**

A. Ms. Smart's recommendation is again misplaced. ChargePoint has a history of opposing utility ownership and operation of charging infrastructure. The best way to stimulate innovation, competition, and customer choice in the EV charging market is to ensure the EV market can actually achieve significant growth. By installing a foundational level of Fast Charging infrastructure and providing consumers confidence to travel across the state in an EV, the Pilot will support such broader EV growth. However, such consumer confidence is only bolstered if the infrastructure is accessible, reliable, and well-maintained. The best way to ensure the Pilot meets these goals is for the Company to own and operate the Fast Charging infrastructure deployed by the Pilot.

## III. DUKE ENERGY INDIANA'S RESPONSE TO A COLLABORATIVE PROCESS

**Q. WHAT DOES DUKE ENERGY INDIANA THINK ABOUT MS. AGUILAR'S REQUEST FOR A COMMISSION ORDERED COLLABORATIVE?**

A. Duke Energy Indiana has already extensively engaged a broad cross-section of stakeholders including customers, industry participants, environmental NGOs, and many others for discussion and input on the structure of the Pilot. While additional collaborative discussions could be helpful, we believe any more formal convening should run in tandem with the Company's proposed ET Pilot rather than prevent its approval and implementation in the instant proceeding. Additionally, the Company does wish to establish a cadence to the collaborative

process with annual or bi-annual meetings. Further, the collaborative process should review data gathered, as outlined in my direct testimony, while seeking input from stakeholders. The topics suggested on pg. 14 and 15 of Ms. Aguilar's testimony, can be explored through the collaborative process, as data from the pilot is being collected and shared.

**Q. WHY DOES DUKE ENERGY INDIANA BELIEVE THE COLLABORATIVE PROCESS SHOULD "RUN IN TANDEM WITH THE ET PILOT"?**

A. As outlined in my direct testimony, Duke Energy Indiana is attempting to collect an enormous amount of data throughout the ET Pilot. Engaging a collaborative process during the ET Pilot will allow stakeholders to speak directly about the programs, while providing the Company valuable insights. Ms. Aguilar's proposal is not beneficial because it would merely delay the ET Pilot.

**Q. IF THE COMMISSION ADOPTED THE OUCC'S PROPOSAL TO DELAY THE ET PILOT AND COLLABORATE, WHY WOULD DUKE ENERGY INDIANA BE UNABLE TO GAIN VALUABLE EV DATA?**

A. By its nature, a pilot program gathers useful and currently unavailable information in order to make more educated and effective decisions for future planning. Currently, it is difficult for the Company to isolate EV users, sites, and behaviors. All proposed programs have specific expected learning measures, as discussed in my direct testimony. These learning measures are also summarized for easy reference in Petitioner's Exhibit 1-B (LWR). The ET Pilot is designed to allow

Duke Energy Indiana to work with customers in multiple ways to gather this data. This data will inform collaborative discussions and can be used to inform near-term decisions in system planning, resource planning, and customer offerings.

## IV. MODIFICATIONS TO DUKE ENERGY INDIANA'S PROPOSAL

**Q. IS DUKE ENERGY INDIANA RECOMMENDING ANY CHANGES TO THE RESIDENTIAL REBATE PROGRAM?**

A. In reference to Ms. Aguilar's criticism, page 13, lines 1-15, of the Residential Rebate being overly complicated, Duke Energy Indiana is simplifying the residential rebate program to encourage EV drivers to charge outside of peak windows of 6-9AM and 4-8PM on weekdays only. There is no longer a need for the Company to communicate with the customer 24 hours in advance of a load management event. The customer will be able to opt-out twice per month by charging during either of the peak windows, and still be eligible for that month's participation incentive. A third opt-out in a given month will disqualify the EV driver from eligibility of the incentive amount for that month. The incentive will still be paid out quarterly.

In order to further simplify the program, the Company will also use on-board vehicle telematics and AMI data and/or a telematic device instead of an approved networked L2 unit. Participating customers will no longer be required to purchase a L2 EVSE from an approved list. This will allow participating customers to purchase and install any L2 EVSE and network they desire,

maximizing customer choice, which was a concern of ChargePoint Witness Ms. Smart.

**Q. IS DUKE ENERGY INDIANA PROPOSING ANY CHANGES TO THE SCHOOL BUS PROGRAM?**

A. No, but the Company would like to make the following clarifying points. During the initial ET Pilot process, Duke Energy Indiana will demonstrate bi-directional power flow with customers' electric school buses at a designated testing location. As of the filing of this testimony, such a demonstration has not previously been conducted in the state of Indiana. This demonstration will be important to validate the technical capabilities of dispatching EV School Bus batteries in a bi-directional manner, which is a critical first step to any future potential use of EV School Bus batteries as grid resources for resilience or other applications.

Secondly, the Company will allow participating customers to choose the hardware and network they want to deploy, as part of the program.

**Q. IS DUKE ENERGY INDIANA PROPOSING ANY CHANGES TO THE TRANSIT BUS PROGRAM?**

A. In response to concerns that the ET Pilot proposal is too large, Duke Energy Indiana is proposing to remove the Transit Bus Program, as part of this ET Pilot proposal. While the Company still believes utility investment in EV Transit Bus deployments is needed and appropriate, we are for now removing this proposal and will seek other opportunities to support our customers who have expressed interest in and are pursuing EV Transit Bus deployment.

**Q. IS DUKE ENERGY INDIANA PROPOSING ANY CHANGES TO THE COMMERCIAL EV CHARGING REBATE PROGRAM IN RESPONSE TO OUCC'S TESTIMONY IN THIS PROCEEDING?**

A. Yes. In response to Ms. Aguilar's testimony,[8] Duke Energy Indiana will incorporate a question in the rebate application form that asks customers if they are receiving additional funding to install level 2 fleet charging infrastructure. Specifically, the Terms and Conditions of the program will require that the funding supplied by the Pilot program will not duplicate any other funding secured by the participating customer.

Additionally, participating customers will be free to choose any EVSE hardware and network they want to deploy, as part of the program.

**Q. IS DUKE ENERGY INDIANA PROPOSING ANY CHANGES TO THE ALLOCATIONS OF THE COMMERCIAL EV CHARGING REBATE PROGRAM?**

A. Yes. The Company is planning to set allocations as shown below in response to Ms. Aguilar's issue with predetermined rebate categories on page 15, line 16. This will allow Duke Energy Indiana to obtain more specific data for particular use types.

- 200 - Private Fleet operations - Must show ownership/lease of EV by customer.

[8] Referencing LMA p. 14, lines 5-11

- 150 - Private workplaces - No need to prove EV ownership/lease.
- 150 – Multi-Unit Dwelling (MUD) – No need to prove EV ownership/lease.
- 500 – 24/7 public spaces (retail, libraries, workplace, restaurant, government, street parking, garages, etc.) No need to prove EV ownership/lease.
- 10% of all rebates must be meet a low-income requirement defined as neighborhoods where 50 percent of the neighborhood is at the 200 percent poverty level as defined by Federal Poverty Guidelines. [9]

## V. CONCLUSION

**Q. HAS THERE BEEN ANY TESTIMONY FILED IN THIS PROCEEDING THAT CHANGES THE COMPANY'S POSITION ON ITS PROPOSED ET PILOT?**

A. No. The Company fully supports its request for the ET Pilot and the deferral of the costs for future recovery. Importantly, one vendor of charging infrastructure, Greenlots, supports the Company efforts and while ChargePoint wants to see some modifications, it also generally supports moving forward. The Company has made minor modifications to the ET Pilot to address some concerns of the

[9] United States Health and Human Services Poverty Guidelines for 2019, available at https://aspe.hhs.gov/poverty-guidelines.

OUCC, as well. All in all, the ET Pilot is good for Indiana and Duke Energy Indiana customers and should be approved.

**Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes, it does.

**OUCC Witness Aguilar**:

**Question 1-7:** On page 9, lines 5-7: "Utility encouraged deployment by closuring [sic] capital cost gap within the school bus market allowing electric school buses to compete with diesel buses is not appropriate."

a. Please provide the data, report and/or study that supports this conclusion.
b. Please provide the definition for "capital cost gap".

**Response:**

a. The OUCC's conclusion is a policy-based position on the appropriate role of public utilities in providing electric utility service. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.
b. Ms. Aguilar uses "capital cost gap" to refer to the difference in capital costs of traditional diesel school bus vs and electric school bus. The term is also used in DEI's response to OUCC DR 7.2, attached to Ms. Aguilar's testimony in attachment LMA-1.

**Question 1-9:** On page 12, lines 15-17, OUCC Witness Aguilar testifies: "The median new electric vehicle is still well over $39,000 and customers who can afford to pay this amount are unlikely influenced by a $500 rebate."

a. Please provide the criteria the OUCC utilized to determine "customers who can afford to pay."
b. Please provide the total number and general geographic location of the customers the OUCC determined to be "customers who can afford to pay."
c. Please provide the data, report, and/or study that supports this conclusion.

**Response:**

a. In this sentence, the term "customers who can afford to pay" refers to customers who can afford to pay for an electric vehicle with the median price of over $39,000.
b. **Objection:** The OUCC objects to this question to the extent it seeks an analysis the OUCC has not performed and would object to performing.

   Subject to and without waiving its objection, the OUCC responds as follows: The OUCC does not have any information on the total number or geographic location of Duke Energy customers who have purchased or will purchase electric vehicles.
c. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.

**Question 1-10:** On page 12, lines 17-20, OUCC Witness Aguilar testifies: "The OUCC finds more value in time-of-use rates and on-peak load shifting than in rebates to customers likely able to afford the necessary charging equipment to properly integrate vehicle charging into the system for benefit all electric utility customers."

a. Please provide the data, report, and/or study that supports the conclusion there is "more value in time-of-use rates."
b. Please provide the data, report, and/or study that supports the conclusion there is "more value in… on-peak load shifting."
c. Please provide the criteria the OUCC utilized to determine "customers likely able to afford."
d. Please provide the total number and general geographic location of the customers the OUCC determined to be "customers likely able to afford."
e. Please provide the data, report, and/or study that supports this conclusion.

**Response:**

a. The OUCC's finding is a policy-based position on the appropriate incentives to provide customers to encourage beneficial electric vehicle charging. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.
b. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.
c. In this sentence, the term "customers likely able to afford" refers to customers likely able to afford to purchase electric vehicles with a median price of over $39,000.
d. **Objection:** The OUCC objects to this question to the extent it seeks an analysis the OUCC has not performed and would object to performing.

   Subject to and without waiving its objection, the OUCC responds as follows: The OUCC does not have any information on the total number or geographic location of Duke Energy customers who have purchased or will purchase electric vehicles.
e. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.

**Question 1-11:** Beginning on page 15, line 19, OUCC Witness Aguilar testifies: "Specifically for electric school buses, rebates should be targeted to districts who would not otherwise be able to afford an electric school bus. A specific indicator of this could be school districts with the majority of students on government sponsored free and reduced lunch.

a. Please provide the criteria the OUCC utilized to determine "districts who would not otherwise be able to afford an electric school bus."
b. Please provide the data, report, and/or study that supports the conclusion that "school districts with the majority of students on government sponsored free and reduced lunch" cannot afford electric buses.

**Response:**

a. The OUCC did not use specific criteria to determine what districts could or could not afford an electric school bus, but made a suggestion that this issue could be further explored in the collaborative as indicated by the question on page 15 and 14.
b. This conclusion is not based on any specific data, report and/or study, but is based upon Ms. Aguilar's opinion.

**Question 1-12:** Please provide all communications the OUCC has had with Duke Energy Indiana customers regarding Electric Vehicles.

**Response:**

The OUCC is not aware of any communications with Duke Energy Indiana customers regarding electric vehicles.

**Question 1-13:** Please provide all communications the OUCC has had with Duke Energy Indiana customers that own and/or operate an electric vehicle.

**Response:**

The OUCC is not aware of any communications with Duke Energy Indiana customers that own and/or operate an electric vehicle.

DOE Alt Fuels Data Center - list of DCFC for the state of Indiana
*Note, only 24/7 public access, open-standard DCFC charging stations are included in this sampling.

| Fuel Type C | Station Name | Street Address | City | State | Access Days Time | EV DC Fast Count | EV Network | EV Connector Types |
|---|---|---|---|---|---|---|---|---|
| ELEC | Ricker's | 1850 E 151st St | Carmel | IN | 24 hours daily | 1 | Non-Networked | CHADEMO J1772COMBO |
| ELEC | Walmart | 100 Sycamore Estates Dr | Aurora | IN | 24 hours daily | 1 | eVgo Network | CHADEMO J1772 J1772COMBO |
| ELEC | Fashion Mall at Keystone | 8702 Keystone Xing | Indianapolis | IN | 24 hours daily | 1 | eVgo Network | CHADEMO J1772 |
| ELEC | Hamilton Town Center | 13901 Town Center Blvd | Noblesville | IN | 24 hours daily | 1 | eVgo Network | CHADEMO J1772 |
| ELEC | IMPA | 11610 N College Ave | Carmel | IN | 24 hours daily | 2 | ChargePoint Network | CHADEMO J1772 J1772COMBO |
| ELEC | University Park Mall | 6503 Grape Rd | Mishawaka | IN | 24 hours daily | 4 | Electrify America | CHADEMO J1772COMBO |
| ELEC | Walmart 1547 Lafayette | 4205 Commerce Dr | Lafayette | IN | 24 hours daily | 4 | Electrify America | CHADEMO J1772COMBO |
| ELEC | Walmart 5443 Indianapolis | 4650 South Emerson Avenue | Indianapolis | IN | 24 hours daily | 8 | Electrify America | CHADEMO J1772COMBO |
| ELEC | Walmart 1476 (Clarksville, IN) | 1351 Veterans Pkwy | Clarksville | IN | 24 hours daily | 6 | Electrify America | CHADEMO J1772COMBO |
| ELEC | Walmart 4235 - Terre Haute, IN | 2399 State Rd 46 | Terre Haute | IN | 24 hours daily | 4 | Electrify America | CHADEMO J1772COMBO |
| ELEC | HDFW | 6315 Illinois Rd | Fort Wayne | IN | 24 hours daily | 1 | ChargePoint Network | J1772COMBO |

**Attachment ChargePoint 2.12-A**

| Fuel Type C | Station Name | Street Address | City | ZIP | Groups With Access Code | Access Days Time | EV DC Fast Count | EV Network | **Price per minute** | EV Pricing | EV Connector Types |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ELEC | University Park Mall | 6503 Grape Rd | Mishawaka | 46545 | Public | 24 hours daily | 4 | Electrify America | **$0.15** | $.15 at or below 75kW with a $4.00 per month membership. $.21 per minute for charging at or below 75kW plus a $1.00 session fee without a membership. | CHADEMO J1772COMBO |
| ELEC | Walmart 1547 Lafayette | 4205 Commerce Dr | Lafayette | 47905 | Public | 24 hours daily | 4 | Electrify America | **$0.15** | $.15 at or below 75kW with a $4.00 per month membership. $.21 per minute for charging at or below 75kW plus a $1.00 session fee without a membership. | CHADEMO J1772COMBO |
| ELEC | Walmart 5443 Indianapolis | 4650 South Emerson Avenue | Indianapolis | 46203 | Public | 24 hours daily | 8 | Electrify America | **$0.15** | $.15 at or below 75kW with a $4.00 per month membership. $.21 per minute for charging at or below 75kW plus a $1.00 session fee without a membership. | CHADEMO J1772COMBO |
| ELEC | Walmart 1476 (Clarksville, IN) | 1351 Veterans Pkwy | Clarksville | 47129 | Public | 24 hours daily | 6 | Electrify America | **$0.15** | $.15 at or below 75kW with a $4.00 per month membership. $.21 per minute for charging at or below 75kW plus a $1.00 session fee without a membership. | CHADEMO J1772COMBO |
| ELEC | Walmart 4235 - Terre Haute, IN | 2399 State Rd 46 | Terre Haute | 47802 | Public | 24 hours daily | 4 | Electrify America | **$0.15** | $.15 at or below 75kW with a $4.00 per month membership. $.21 per minute for charging at or below 75kW plus a $1.00 session fee without a membership. | CHADEMO J1772COMBO |
| ELEC | Walmart | 100 Sycamore Estates Dr | Aurora | 47001 | Public - Card key at all times | 24 hours daily; EVgo network subscription and key fob required | 2 | eVgo Network | **$0.27** | $7.99 per month and $.27 per minute with a membership. $.30 per minue with a registered Pay As You Go account. $5.99 session fee without registering + $.30 per minu | CHADEMO J1772 J1772COMBO |
| ELEC | Fashion Mall at Keystone | 8702 Keystone Xing | Indianapolis | 46240 | Public - Card key at all times | 24 hours daily; EVgo network subscription and key fob required | 1 | eVgo Network | **$0.27** | With a registered Pay As You Go account. $7.99 per month and $.27 per minute with a membership. $5.99 session fee without membership + $.30 per minute | CHADEMO J1772 |
| ELEC | Hamilton Town Center | 13901 Town Center Blvd | Noblesville | 46060 | Public - Card key at all times | 24 hours daily; EVgo network subscription and key fob required | 1 | eVgo Network | **$0.27** | With a registered Pay As You Go account. $7.99 per month and $.27 per minute with a membership. $5.99 session fee without membership + $.30 per minute | CHADEMO J1772 |
| ELEC | Greenlots - 63018 | 3750 East Fall Creek Parkway | Indianapolis | 46205 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63019 | 4002 S East St | Indianapolis | 46277 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63020 | 2068 E Hadley Rd | Plainfield | 46168 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63021 | 2102 N Post Rd | Indianapolis | 46219 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63024 | 5061 E Washington St | Indianapolis | 46201 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63028 | 9797 E 116th St | Fishers | 40037 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63026 | 3355 W 16th St | Indianapolis | 46222 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63027 | 8558 Northwest Blvd | Indianapolis | 46278 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Greenlots - 63025 | 1850 E 151st Street | Indianapolis | 46236 | Public | 24 hours daily | 2 | Greenlots | **$0.17** | DC Fast: $10.00 per hour, minimum payment of $5.00, maximum payment of $30.0C | CHADEMO J1772COMBO |
| ELEC | Meijer - Tesla Supercharger | 1424 W Carmel Dr | Carmel | 46032 | Public | 24 hours daily; for Tesla use only | 10 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Ramada Angola, 6 Autumns Food & Spirits - Tesla Supercharger | 3855 Indiana 127 | Angola | 46703 | Public | 24 hours daily; for Tesla use only | 6 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Switch Parking Garage - Tesla Supercharger | 9 Municipal Drive | Fishers | 46038 | Public | 24 hours daily; for Tesla use only | 10 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Meijer - Tesla Supercharger | 6309 Lima Road | Fort Wayne | 46818 | Public | 24 hours daily; for Tesla use only | 10 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | La Quinta South Indianapolis - Tesla Supercharger | 5120 Victory Drive | Indianapolis | 46203 | Public | 24 hours daily; for Tesla use only | 8 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Lafayette - Tesla Supercharger | 4901 State Rd. 26E | Lafayette | 47905 | Public | 24 hours daily; for Tesla use only | 8 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Meijer - Tesla Supercharger | 611 West Lincoln Highway | Merrillville | 46410 | Public | 24 hours daily; for Tesla use only | 10 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | University Park Mall - Tesla Supercharger | 6501 Grape Rd | Mishawaka | 46545 | Public | 24 hours daily; for Tesla use only | 6 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Meijer - Tesla Supercharger | 5600 E. New Margaret Dr. | Terre Haute | 47803 | Public | 24 hours daily; for Tesla use only | 8 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Plaza Garage - Tesla Supercharger | 109 S Capital Ave | Indianapolis | 46225 | Public | 24 hours daily; for Tesla use only | 12 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |
| ELEC | Meijer - Tesla Supercharger | 6650 Whitestown Pkwy | Whitestown | 46075 | Public | 24 hours daily; for Tesla use only | 10 | Tesla | **$0.13** | $0.26 per minute above 60 kW and $0.13 per minute at or below 60 kW | TESLA |

| | | |
|---|---|---|
| | **$0.180** | **cents per minute average** |
| | 50 | kW average charging rate |
| | 30 | minute session duration |
| | **25** | **kWh per charging session** |
| **$** | **0.216** | **cost per kWh** |

| | | |
|---|---|---|
| **$** | **0.216** | **IN DCFC average cost per kWh excluding Tesla Superchargers** |
| **$** | **0.193** | **IN DCFC average cost per kWh including Tesla Superchargers** |

## VERIFICATION

I hereby verify under the penalties of perjury that the foregoing representations are true to the best of my knowledge, information and belief.

Signed:_____ Dated: 1/2/2020

Lang W. Reynolds