STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF DUKE ENERGY INDIANA, LLC FOR APPROVAL OF AN ELECTRIC TRANSPORTATION PILOT PROGRAM	**)** **)** **)**	**CAUSE NO. 45253 S2**

VERIFIED CROSS-ANSWERING TESTIMONY AND ATTACHMENT

OF

ANNE T. SMART

ON BEHALF OF

CHARGEPOINT, INC.

CHARGEPOINT, INC.'S EXHIBIT 2

I. Introduction

Q: Please state your name and business address.

A: My name is Anne T. Smart. My business address is 254 E. Hacienda Ave., Campbell, CA 95008.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of ChargePoint, Inc. ("ChargePoint"), where I serve as serve as Vice President of Public Policy.

Q: What attachments are you sponsoring?

A: Yes, Attachment ATS-10 is a chart prepared under my direction and supervision that lists proposed and approved state-level EU charging programs and that are made ready and rebate models.

Q: Are you the same Anne Smart that submitted direct testimony in this proceeding on October 30, 2019?

A: Yes.

Q: What is the purpose of your cross-answering testimony?

A: My testimony addresses assertions in direct testimony from Zeco Systems, Inc. d/b/a Greenlots ("Greenlots"), as presented by Witness Cohen, regarding Duke Energy Indiana LLC's ("Duke Energy" or the "Company") Electric Transportation Pilot Program ("ET Pilots"). In addressing Witness Cohen's testimony, I plan to provide additional perspectives on the current growth of the electric vehicle ("EV") and charging markets in Indiana, the extent of competition

present in Indiana's market, and the role of utilities in the EV charging space in the context of existing market dynamics.

Q: What is your general assessment of Witness Cohen's testimony on behalf of Greenlots?

A: I believe that Greenlots and ChargePoint share the common goal of expanding EV infrastructure and EV adoption in the State of Indiana and establishing a long-term, sustainable market. The companies diverge, however, on critical assessments of the current market that affect our approaches to achieving that common goal. I believe that the approach Greenlots favors, which centers around utility ownership of charging infrastructure, will be detrimental to the long-term market for EV charging. Additionally, I believe that there are viable, successful alternatives to this utility investment model that would benefit all market participants.

Q: What specific testimony from Witness Cohen do you wish to address?

A: My testimony addresses three main erroneous, opinion-based assertions Witness Cohen advances in testimony:

1. Section II of my testimony addresses Witness Cohen's assertion that a competitive market for charging infrastructure, both in Indiana and nationally, is aspirational, and that there is not sufficient private investment to grow that market. (10:234-236).

2. Section III of my testimony responds to Witness Cohen's claim that utility ownership of charging stations will not hinder the private market and will advance the market for charging stations and attract greater private investment to the state. (12:266 – 13:300).
3. Section IV of my testimony counters Witness Cohen's contention that the need for utility ownership is becoming "increasingly understood" by the stakeholder community and regulators, citing examples in Maryland and Minnesota. (15:335 – 16:363).

II. Current State of the Charging Market

Q: Witness Cohen asserts that the "the lack of adequate charging infrastructure" (9:211-215) hinders EV adoption in Indiana. Do you agree that without Duke Energy's investment, EV adoption is likely to stall?

A: No, I do not. Furthermore, the actual market data do not support that opinion. According to IHS/Polk industry data (ChargePoint Exhibit 1, 7:17- 8:3), the rate of EV adoption in the state is above the national average, with year-over-year EV registrations increasing at roughly 47%. Several projections point to increased EV adoption in Indiana for years to come. For example, a 2017 licensed Navigant report forecasts that annual sales of EVs in Indiana will increase from 913 observed in 2017 to 6,806 in 2026 under baseline conditions, representing more than 740% growth in EV sales over the base year. Additionally, Duke Energy's own evidence shows a projected increase in electric vehicle registrations in the

state, which undermines Witness Cohen's position. (*e.g.*, Duke Energy's Exhibit 31-A, p.9, Figure 4).

Q: How do you respond to Witness Cohen's position that EV adoption is likely to be slow without EV charging infrastructure build-out?

A: I believe that Witness Cohen's opinion is overly simplified and not consistent with the complexities of EV adoption and consumer preferences. While EV charging availability is certainly a factor in driving EV adoption, it is not the sole determinant of the market's growth trajectory. For example, a key inhibitor to EV adoption in many states that Witness Cohen fails to mention is model availability. Though many major automakers offer plug-in models, not all models are available in all states. Furthermore, not all currently available EVs fit the needs of every driver. While more and diverse models are coming to market in the coming years, it is critical for consumers to see those options available locally. Without a locally available choice of electric models to meet consumers' needs, EV adoption may not be as robust as the market might otherwise demand. Simply put, increased charging availability alone does not determine EV market outcomes.

Q: Is there any evidence to suggest that without Duke Energy's investment, charging infrastructure build-out would be inadequate, as Witness Cohen claims (9:211-215)?

A: No. In fact, the current market conditions show that charging infrastructure continues to be built out in Indiana, and as Witness Cohen notes, with greater

projected EV penetration in the coming years, the business case for charging will only improve.

Q: Is it your understanding that charging infrastructure must come first to a market for EV growth to increase?

A: Witness Cohen describes a common misconception of the EV charging market that EV adoption will stagnate or even decline without charging infrastructure installed in that market first. (10:235-236). This is often referred to as the "if you build it, they will come" issue of EV adoption, wherein Greenlots suggests that EV charging must be overbuilt for the current market before the EVs can be adopted, or that EV charging alone drives demand for electric vehicles. But at the same time, Witness Cohen claims the opposite at 13:302-304 of his testimony: that when more drivers adopt EVs, the demand for charging services increases and a more favorable market for private investment emerges.

Witness Cohen's opinions on this dynamic ignore the actual market conditions present in Indiana today, where EV charging and EV adoption are already growing in tandem. (ChargePoint Exhibit 1, 8:6-11:6 and Attachment ATS-1). In the absence of utility ownership of charging infrastructure, more drivers are already adopting electric vehicles in the Indiana market, which in turn, is driving greater private investment in charging infrastructure locally. There is no need to overbuild charging infrastructure ahead of the EV market, as supply and demand will determine the most effective and efficient charging build-out over time.

Furthermore, the projected growth of EVs in Indiana will stimulate greater private investment in EV charging.

Q: Witness Cohen believes that EV charging represents a "…classic market failure which warrants public investment and the involvement of regulated utilities"(10:232-234). Do you agree?

A: No, I do not. Mr. Cohen claims market failure when the evidence establishes that the EV market in Indiana is a growing market that exceeds the national average. (ChargePoint Exhibit 1, 7:17-8:5). There is natural demand for and private investment in EV charging services in Indiana, and EV charging will continue to expand as more models come to market and with wider availability to consumers.

III. Utility Ownership and Private Investment

Q: Given that EV growth is projected to continue in the state, even in the absence of Duke Energy's investment, do you agree with Witness Cohen that utility investment can accelerate the build-out of EV charging (9:257-262)?

A: In general, yes. But it is critical that utility investment aligns with current competitive market conditions, where site hosts of EV charging select their own charging solutions, manage the charging in a way that aligns with their operations onsite, and allows for private investment in EV charging. Without these features, a utility investment serves to undermine the natural demand for EV charging products by flooding the market with a cost-free, ratepayer-funded offering and can actually hold back competitive opportunities for charging providers.

Q: Witness Cohen suggests that only utility ownership of charging stations can result in widespread build-out of charging infrastructure (13:306-309). How does ChargePoint respond?

A: ChargePoint disagrees with Witness Cohen. I believe, and it has been ChargePoint's direct experience, that alternative models, such as rebates or make-ready investments, can achieve the same or greater build-out than what is proposed in Duke Energy's ET Pilots. These incentive-based programs effectuate in the short-term what Witness Cohen incorrectly claims utility ownership of charging infrastructure would do in the long-term – lower cost barriers for site hosts to invest in, install, own, and maintain EV charging stations. Importantly, those models have been approved in utility programs around the country. (ChargePoint Exhibit 1, 15:6-16:2).

Q: Witness Cohen claims that "…no number of competitive suppliers/producers results in a competitive market in the absence of a sufficiently large number of consumers or motivated buyers" (11:250-252). Please speak to the availability of charging networks in Indiana.

A: Seven charging networks operate in the Indiana charging market today. (ChargePoint Exhibit 1, 9:1-3). These networks, including ChargePoint's network, are continuously growing and would not be present in Indiana without private investment.

Q: Is there anything preventing more competitors among EV charging networks to enter the Indiana market?

A: No, and ChargePoint supports greater competition in the EV charging space.

Q: What is ChargePoint's position on Witness Cohen's opinion that there is a "lack of a sustainable private market business model for the ownership and operation of public charging stations based on revenues from charging activities" (10:237-239)?

A: ChargePoint disagrees. According to the Department of Energy's Alternative Fuels Data Center ("AFDC"), here are 6,095 public DC fast charging stations in the nation, with only a small fraction of those not charging a fee to drivers for use of the stations. There are multiple competitors installing new stations every month in states across the nation. In addition, there are numerous direct and indirect benefits for installing charging onsite that are unrelated to the price to charge, such as more foot traffic at a retail establishment, longer stays in a store, a provided benefit for employees at a workplace, or a public amenity for a municipality. The evidence of sustainable business models for EV charging is obvious, as private investment in charging infrastructure is increasing nationally. As Witness Cohen admits, there has been and is "significant private investment in technology companies engaged in supporting transportation electrification." (11:248-249).

Q: Are the consumers of charging services, or site hosts, in Indiana diverse as well, or are these motivated buyers "few and far between" as Witness Cohen claims (11:244-248)?

A: There are a wide range of site hosts offering public charging services in Indiana. For example, according to the AFDC, there are 325 public charging ports across Indiana. The site hosts include Ford, Nissan, and BMW dealerships, municipalities like the City of Evansville and City of La Porte, major transportation hubs like Indianapolis International Airport, utilities including Northern Indiana Public Service Company, retail establishments like Kohl's and Walmart, and hotels like Wyndham Garden in Warsaw.

Q: Witness Cohen asserts that private investment in EV charging stations is "aspirational" (10:234-236). What is the state of private investment in charging infrastructure in the State of Indiana?

A: Increasing steadily and concurrent with electric vehicle adoption. In fact, the vast majority of charging infrastructure already installed in Indiana is the result of private investment, in whole or in part. ChargePoint Exhibit 1, 9:1-3 and Attachment ATS-2 demonstrate that private investment has played a unique role in EV charging infrastructure build-out in Indiana. There are many more private charging ports that are not included in AFDC's total figure, which may have limited access to the public or have exclusive use permissions, such as a fleet charging station. I have also omitted Tesla charging stations, which do not utilize

a standard connector, but provide charging for Tesla drivers. Private charging ports and Tesla stations are also the subject of private investment.

Q: Witness Cohen claims that Duke Energy's DC fast charging ("DCFC") program, which involves utility ownership of charging stations, "will help support the private market" (12:276-277). What is ChargePoint's position?

A: ChargePoint disagrees. In contrast to Greenlots's erroneous assertion that the Company's DCFC program would stimulate private investment, Duke Energy's DCFC program itself does not involve any private investment or site host contribution, even when other offerings in the proposed ET Pilots actually do. Nor does Duke Energy factor in a long-term plan for the future to enable third parties to own and operate DCFC. In reality, Duke Energy's plans to own and operate charging infrastructure would therefore actually involve a chilling or replacement of ongoing third-party private investment opportunities as Duke Energy approaches prospective private sector customers with cost-free offerings effectively subsidized by ratepayers.

Q: How do you respond to Witness Cohen's contention that competitive market participants will benefit from what Greenlots refers to as "the wholesale-level competition that results from utility procurement" that will "level the playing field" (17:403-404)?

A: ChargePoint disagrees with this notion. Many of Duke Energy's programs will instead promote a new, single network provider funded by ratepayers over other

providers currently active in the competitive market. This would not level the playing field. There would be a limit on the choices that customers have, since one network would be subsidized and others would be at cost, and without customers' ability to choose from the full range of solutions that best fit their circumstances and needs, the market would be less competitive and less innovative. Greenlots' preference for utility procurement would be less efficient and less effective than allowing the market to grow and mature in a competitive manner.

Q: Do you believe that today's market represents a "level playing field" for competition?

A: Yes. The level playing field that Greenlots envisions is actually present in the current market, where vendors compete for site hosts to choose their technology over the offerings of others. This ongoing competition encourages differentiation which leads to innovation and creates greater value for consumers. Under current market conditions, nothing prevents or has prevented Greenlots from competing with ChargePoint or any other competitor for offering EV charging services to customers in Indiana.

Q: How would Commission approval of Duke Energy's plans to select a single charging network for which Greenlots advocates affect this level playing field?

A: Should the Commission allow Duke Energy to select a single network vendor to deploy charging services, it would create a significant competitive advantage for whatever vendor is selected and upset the competitive balance currently present in Indiana's EV charging market. It would skew the level playing field in favor of utility-provided, cost-free offerings.

Q: Is utility procurement the same as market competition, as Witness Cohen suggests (18:411-412)?

A: No, it is not. Greenlots imagines the monopoly utility to be a "significant motivated buyer" in a market that, in its opinion, lacks one. (17:399-403). Greenlots, however, fails to appreciate the fact that allowing a monopoly utility to operate charging infrastructure is unlike allowing any other "buyer" to enter a competitive marketplace. Simply put, private third-party investors in EV charging stations take on the risks of investment and risks associated with making a business case to particular customer segments. On the other hand, in operating charging infrastructure, Duke Energy would not bear any of those same risks, but rather would pass them on to ratepayers, creating an obvious market imbalance and distortion. In other words, the monopoly would be operating in the same space as private competitors without the risks or business considerations associated with this investment. Furthermore, no other "motivated buyer" in the competitive market for charging has access to ratepayer funding to finance what is inherently a private market endeavor.

IV. Utility Ownership and Regulator Preference

Q: Witness Cohen cites a decision from the Maryland Public Service Commission ("Maryland Commission") as examples of commissions that react to "the value and market need for utility ownership" (15:335-336). What is your perspective on the Maryland Commission decision?

A: While the Maryland Commission approved utility ownership of charging stations, the Maryland Commission modified the original proposal from the utility to scale down the size of the deployment of utility-owned infrastructure. The Commission also limited the utility-owned charging deployments to public sector charging locations only, so as to avoid conflict with competitive market activities. In its decision in Order No. 88997, the Maryland Commission cited concerns "that a utility-owned EV charging network could limit private sector interest in investing in this marketplace." (*Petition of the Electric Vehicle Work Group*, 2019 WL 249400 at *39 (Md.P.S.C.)). In addition, the Maryland Commission cited other policy involved with utility ownership of charging stations, "such as competitive access to charging infrastructure, cost impact, and ratepayer exposure to risks associated with sunk costs and stranded assets." (*Id.*). The Maryland Commission's decision clearly notes the risk of ratepayer investment in utility-owned infrastructure.

Q: Witness Cohen also addresses a Minnesota Public Utility Commission ("Minnesota Commission") decision in his testimony starting at 15:352. Please comment on that.

A:. Certainly. Witness Cohen cites the Minnesota Commission's order for the position that state commissions are recognizing the importance of utility owned charging infrastructure. Several things strike me about the Minnesota Commission's order. First, while Xcel was authorized to own and maintain infrastructure in the fleet pilot program, ownership and maintenance of the charging equipment is determined by the participant. Importantly, only at the participant's request would Xcel own and maintain the charging equipment. (*In the Matter of Xcel Energy's Petition*, 2019 WL 3252106 at *3 (Minn.P.U.C.)). Furthermore, in the Public Charging pilot that Witness Cohen omits from his testimony, Xcel was actually precluded by the Minnesota Commission from owning and maintaining charging equipment: "Xcel would own install, own (*sic*), and maintain infrastructure but would not own or maintain any charging equipment. Xcel stated that public charging equipment is a critical element of expanding the EV market because it supports longer distance driving and makes charging available to those who do not charge EVs at home." (*Id.* at *4). Accordingly, the Minnesota Commission order cited by Witness Cohen does not support his contention that state commissions are increasingly recognizing utility ownership as an important element of EV charging station growth.

Q: Have other state Commissions given additional scrutiny to utility ownership of charging infrastructure?

A: Yes. In its decision to reject a proposal from Ameren Missouri to own and operate charging infrastructure, the Missouri Public Service Commission stated that the

existence of the competitive market precluded the need for utility operation of charging stations in the same jurisdiction.

> The Commission concludes that Ameren Missouri has not demonstrated that the business of EV charging stations needs to be regulated in order to protect the public. Currently, EV drivers are not captive customers being served by a single utility, but have a choice among several providers of EV charging services. Ameren Missouri may own and operate EV charging station in Missouri, but, may only do so on an unregulated basis without including those charging stations in its rate base or seeking recovery from rate payers for any of the costs associated with the construction or generation of those charging stations.

(*Application of Ameren Missouri*, 2019 WL 1493872 at *7 (Mo.P.S.C.)).

The Commission noted that enabling the monopoly utility to own and operate charging infrastructure alongside a competitive market would create "unnecessary duplication of service" that would serve as "barriers of entry to new competition." (*Id*. at *6).

Q: Witness Cohen suggests that State commissions are readily supporting utility ownership and operation of charging infrastructure. Is utility ownership the most commonly approved model of utility investment in charging infrastructure?

A: No. Make ready and rebate programs account for the vast majority of state commission-approved programs across the country. Attachment ATS-10 to my testimony contains a list compiled under my direction and supervision of proposed and approved state-level EV charging programs that are make ready and

rebate models, which enable site host choice of charging infrastructure, site host control of charging infrastructure, and site host private investment in charging infrastructure.

V. Conclusion

Q: Please summarize your cross-answering testimony.

A: Certainly. ChargePoint and Greenlots share a common goal to expand EV charging infrastructure and EV adoption. ChargePoint takes a market-based approach to attaining this common goal. Greenlots, however, believes rate-payer-subsidized utility ownership provides the path to reach that common goal. ChargePoint believes the approach advocated by Greenlots (and Duke Energy) will ultimately be detrimental to development of the EV charging infrastructure market and will chill private investment. ChargePoint advocates for programs such as make ready and rebate programs what will encourage market growth without chilling private investment and otherwise damaging the overall market growth.

Q: Does this conclude your cross-answering testimony?

A: Yes.

VERIFICATION

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

Signature: _____ Dated: __December 4, 2019__

Anne T. Smart

Examples of Utility Programs

Utility	Program Name/Focus	Program Summary	Status
SCE	Charge Ready	Make-ready infrastructure plus rebates towards portions of the charging station costs for 1,000 commercial ports at long-dwell time locations	Phase 1 Complete
SCE	DCFC Urban	Make-ready infrastructure plus rebates towards portions of the charging station costs for 25 DC fast chargers	Proposed
SCE	Transit	Make-ready infrastructure plus rebates towards portions of the charging station costs for DC fast chargers	Proposed
SDG&E	Power Your Drive	“Custodian” model for ~3,500 commercial ports at multi-unit dwellings and workplaces with a special rate that encourages off-peak charging	Active
SDG&E	Highway/ Shuttle	“Custodian” model for 80 L2 commercial ports and 13 DC fast chargers at par-n-ride and shuttle locations	Proposed
PG&E	EV Charge Network	Make-ready infrastructure plus rebates towards a portion of the charging station costs. 7,500 MUD and workplace ports. PG&E can own and operate up to 35%. Rate to driver and rate to host pricing	Launched
PG&E	MD/HD Fleet	Make-ready infrastructure plus rebates towards portions of the charging station costs for 10 DC fast chargers	Proposed

Examples of Utility Programs (Cont.)

Utility	Program Name/Focus	Program Summary	Status
LADWP	EV Charging	Rebates of $500 - $750 for 1,500 home stations. Rebate for commercial stations $4,000 single port and $4,750 dual port for 5,000 stations	Active
Eversource (MA)	Commercial Charging	Make-ready infrastructure for 4,100 L2 ports at long-dwell time locations and 67 DC fast chargers across ~500 commercial locations	Active
RMP	EV Charging	Rebates for commercial / WP L2 ($3,500 dual port) and DCFC ($30K) also has TOU rate pilot and load study incentives	Active
RMP	West Smart	Rebate program for 90 DC fast chargers	Active
NV Energy	EV Charging	Rebate and customer grant program for 2,000 L2 ports and 100 DC fast chargers.	Active
AEP OH	EV Charging	Rebate program covering a percentage of the total cost of installation plus the charging hardware for 300 L2 stations and 75 DC fast chargers	Active
National Grid MA	Commercial Charging	Rebate program covering the cost of installation/make-ready plus a portion of the L2 EVSE for 1,200 L2 ports and 80 DC fast charging stations at 140 sites	Active
National Grid RI	EV Charging	Make-ready infrastructure for 320 L2 and 46 DC fast chargers	Active

Examples of Utility Programs (Cont.)

Utility	Program Name/Focus	Program Summary	Status
Duquesne Light	Public Charging	$500k towards electric bus charging at Port Authority; $1.3M in rebates towards make-ready for public L2 charging	Active
Ameren	EV Charging	Make-ready infrastructure plus rebates – estimated 1,700 ports with focus on DCFC corridor but also residential, MUD, commercial, fleet	Approved
BGE	EV Charging	Rebates for 1,000 smart home chargers and 750 ports for multi-family; 450 L2 and 50 DCFC utility owned, public stations at local government locations	Approved
Pepco MD	EV Charging	Rebates for 1,000 smart home chargers and 250 ports for multi-family; 305 L2 and 45 DCFC utility owned, public stations at local government locations	Approved
PSEG NJ	EV Charging	Make-ready infrastructure plus rebates – estimated 37k residential stations, 4,400 commercial L2 ports, and 450 DC fast chargers, plus grant opportunities for school bus and fleet applications	Filed
Consumers Energy	EV Charging	Make-ready rebates for infrastructure – estimated 3,220 ports – residential, workplace, multi-family, and DCFC – rebates treated as regulatory asset and planning to partner with industry	Approved

Examples of Utility Programs (Cont.)

Utility	Program Name/Focus	Program Summary	Status
DTE	EV Charging	Make-ready rebates for smart charging infrastructure – estimated 4,770 ports – residential, workplace, multi-family, and DCFC for corridors and urban hubs – rebates treated as regulatory asset and planning to partner with industry	Approved
Xcel Energy	Fleet and Public EV Charging	Utility owned make-ready infrastructure – estimated 1,050 ports – fleet and public charging, DCFC and L2 – also offering on-bill financing for EVSE for fleets – smart charging preferred and only smart charging offered for utility EVSE	Filed
Xcel Energy	Residential EV Charging	Residential smart charging pilot underway – total 100 ports – with commission approval for expanded pilot to include an estimated 2,800 ports	Developing