BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF DELMARVA POWER & LIGHT COMPANY FOR APPROVAL OF A PROGRAM FOR PLUG IN VEHICLE CHARGING (Filed October 19, 2017)	))))	PSC DOCKET NO. 17-1094

FINDINGS AND RECOMMENDATIONS OF THE HEARING EXAMINER

DATED July 11, 2018

Mark Lawrence
Senior Hearing Examiner

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Mark Lawrence, having been appointed to act as the Hearing Examiner in this matter by PSC Order No. 9184 dated February 1, 2018, submits the following report to the Commission.

I. APPEARANCES

On behalf of the Applicant Delmarva Power and Light Company ("Delmarva", "DPL" or "the Company"):

By: DRINKER BIDDLE & REATH LLP
THOMAS P. MC GONIGLE, ESQ.

LINDSAY B. ORR, ESQ.
Assistant General Counsel

On behalf of the Public Service Commission Staff ("Staff" or "Commission Staff"):

By: ROBERT WILLARD, ESQ.
DEPUTY ATTORNEY GENERAL

Connie McDowell
Senior Regulatory Policy Administrator

Amy Porter
Public Utilities Analyst III

On behalf of the Delaware Department of Natural Resources & Environmental Control ("DNREC"):

By: RALPH DURSTEIN III, ESQ.
DEPUTY ATTORNEY GENERAL

On behalf of the Division of the Public Advocate ("DPA" or "Public Advocate"):

By: REGINA A. IORII, ESQ.
DEPUTY ATTORNEY GENERAL

ANDREW SLATER
PUBLIC ADVOCATE

On behalf of the Caesar Rodney Institute ("CRI"):

By: DAVID T. STEVENSON, DIRECTOR
CENTER FOR ENERGY COMPETITIVENESS

On behalf of the Sierra Club:

By: JOSHUA BERMAN, ESQ.

KENNETH T. KRISTLE, ESQ.
PROFESSOR OF LAW, DIRECTOR, ENVIRONMENTAL & NATURAL RESOURCES LAW CLINIC, WIDENER UNIVERSITY DELAWARE LAW SCHOOL

BACKGROUND

1. On July 3, 2018, I held a Conference Call for this Docket. The Call centered around Delmarva Power's request on June 22, 2018 to file a new Consultant's Report regarding Electric Vehicle Charging in Delaware. The Report is attached hereto as Exhibit "1."

2. The Report is entitled "Benefit Cost Analysis for Electric Vehicle Adoption in the Delaware DPL Territory." It is was prepared by Gabel Associates, Inc., a New Jersey-based firm of Energy Consultants.

3. If Delmarva Power was permitted to file this Report, the

evidentiary hearings scheduled for July 11 and 12 would have to be delayed, and the Procedural Schedule and Discovery Schedule would have to be amended to afford the other parties a sufficient amount of time to fairly assess the Report and the effect on their respective positions.

4. The Report does not change the programs proposed by Delmarva Power in its Amended Application. Rather, in the Report, Delmarva attempts to give more of a factual basis of why Delmarva believes that the Commission should adopt those programs.

5. The Amended Application seeks the following relief from the Commission: a) that the Commission approve the Company's seven (7) proposed Electric Vehicle Offerings described in the next paragraph; and b) that the Commission establish a regulatory asset to defer costs associated with implementing the proposed Program in the amount of $2,238,550, although the Company anticipates receiving $205,000 from program participants leaving a total cost of $2,233,550 to be borne by ratepayers. Moreover, the Company seeks that: c) the Program's costs categorized as Operations & Maintenance be deferred to a regulatory asset and amortized over a five (5) year period; and d) those costs associated with capital assets be deferred to a regulatory asset and amortized over a fifteen (15) year period, and also be incorporated into rate base and earn a return as part of a base distribution rate proceeding. (Amend App, p.23; Blazunas, pp. 7-9.)

6. In the Amended Application, Delmarva is proposing a voluntary Plug In Vehicle ("PIV") Program, consisting of seven (7) separate, limited offerings for PIV charging in Delaware, described below:

a) **Residential** - with Existing Electric Vehicle Supply Equipment provided by the Company, providing discounted whole House Time of Use encouraging charging during off-peak hours i.e. peak hours are between 12 Noon and 8 p.m., Monday through Friday;[1] these customers will select Level 1 service which is 120-volt, AC power which plugs into a typical electrical outlet; Level 1 service takes about 12 hours to charge a fully depleted 50 mile battery;

b) **Residential** - with Existing Electric Vehicle Supply Equipment, providing a FleetCarma© device option to fifty (50) qualified customers which, if installed in the vehicle, tracks data on usage, location, time and amount of charge; customers installing same will receive a credit on their Level 1 service and an additional credit for off-peak charging;

c) **Residential** - without Existing Electric Vehicle Supply Equipment - the Company will be providing Smart Level 2 Equipment to provide a time of use rate, and if the customers have a range of 30 miles or greater, the Company will install a 2nd Meter at fifty (50) customers' homes at 50% of the cost for a period of at least one (1) year; Level 2 stations are 240-volt, AC power mounted on a wall or a pedestal, and take 3-5 hours to charge a fully depleted battery;

d) **Multi-Family Dwelling Units** (condominium/apartment buildings) with dedicated on-site parking currently without Existing Electric Vehicle Supply Equipment; the Company will provide ten (10) Level 2 stations at 50% of the cost upon request for qualified buildings where at least three (3) Delaware registered PIV owners who are DPL account holders reside, with the building owner paying for installation costs; this offering does not offer discounted whole House Time of Use because multiple residents may need access to the charger and it may be unfair to customers who need to charge during daytime hours;[2]

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[1] This is the only one of the first four (4) offerings which does not allow third-party supplier participation. (Stewart, p. 15)

[2] For SOS customers selecting a PIV-specific rate under Offerings a through d, they will also have the option of receiving electricity consisting of 100% renewable energy. (Amended App., p. 18)

e) **Public Charging Corridor** - Installation of two (2) Direct Current Fast Chargers ("DCFC") along major roadways in Delmarva's service territory based primarily upon expected use; the Chargers will be Company owned and maintained;

f) **Public Charging Neighborhood Installation** - up to two (2) Level 2 Charging Stations installed in communities in Delmarva's service area "based upon a maximum opportunity for use and convenience of PIV users within the neighborhood;" the Chargers will be Company owned and maintained; and

g) **Electric School Buses** - "Delmarva proposes to work with appropriate agencies within the State of Delaware and/or local schools or community centers to develop a [$370,000] program that will bring the benefits of electric buses … to school aged children within Delmarva Power's service territory." This proposed school bus offering was the primary change between the Company's original and Amended Applications. (Amended App., pp. 14-21; Stewart, pp. 15,20; Blazos, pp. 3-7; Sch. (PBR)-2, p.5.)

7. In its pre-filed testimony, Staff did not disagree with Delmarva's proposed programs but rather sought that the Company's shareholders pay for the program or that the programs are self-sufficient, without ratepayers paying for the programs. (Porter, p.5) Staff has not retained a Consultant.

8. In its pre-filed testimony, the Public Advocate disagrees with the proposed programs and does not want ratepayers paying for the programs. (Slater testimony) The Public Advocate has retained a Consultant. The Public Advocate also argues that funds are available from multiple sources to pay for Delmarva's proposed programs: a) the Volkswagen Settlement funds from the diesel emissions scandal; b) school district requests for electric school buses; and c) state requests. (Slater, pp. 10-11) Intervener

Caesar Rodney Institute ("CRI") also disagrees with Delmarva's proposed programs and does not want Delmarva's ratepayers paying for the programs.

9. Interveners DNREC and the Sierra Club support Delmarva's Amended Application and its proposed programs.

10. Delmarva, DNREC, and the Sierra Club are in favor of Delmarva filing the Report knowing the case will be delayed and additional discovery will take place. Staff, the Public Advocate and CRI oppose Delmarva's request and seek that the evidentiary hearing take place now.

11. I ruled that Delmarva could file the Report, the evidentiary hearings scheduled for July 11 and 12 were cancelled, and a new Procedural Schedule would be implemented allowing necessary new discovery to take place. Since the Public Advocate has advised me that it intended to appeal my ruling, I drafted these Findings and Recommendations.

DISCUSSION

12. According to Rule 2.6.4 of the Commission's Rules of Practice and Procedure: "The Commission, designated Presiding Officer or Hearing Examiner may vary discovery provisions, in the interest of justice …." (emphasis supplied)

13. I have not made any final Recommendations in this case; rather I have simply varied the discovery of the case "in the interest of justice." Respectfully, Staff, the Public Advocate and CRI seek to have the Commission push this case to

hearing now without all of the facts being out of the table, which is not what this Commission has done in the past. Rather, in the past, the Commission has consistently sought to assemble a complete evidentiary record, even if a hearing delay is involved. I dislike a hearing delay as much as anyone. But, I prefer a hearing delay over an obvious incomplete evidentiary record.

14. If the Commission examines the forty nine (49) page Report prepared on Delmarva's behalf attached hereto as Exhibit "1," it will see that it contains detailed analysis which will substantially aid the Commission in deciding this case.

15. The Report gives a detailed analysis as to: the future of electric vehicles in Delaware from 2019 through 2035, the physical and economic impacts on Delaware and its infrastructure, anticipated grid and non-utility costs, and Delmarva's proposed performance on three (3) Net-Benefit Costs Tests: the Adapted Rate Impact Measure (RIM), the Adapted Societal Cost Test (SCT), and the Adapted Total Resource Cost Test (TRC). I believe that this Report is critical for the Commission to properly decide this case in a rapidly changing area of utility law.

16. No party will be prejudiced by the filing of this Report and the delay of the evidentiary hearings. Each party will be afforded a sufficient amount of time to conduct any discovery into the Report which it wants to do. Each party will clear the evidentiary hearing dates with their schedule. Finally, I believe that, based upon the

issues in this case, if the Report is deemed filed, this case can be completed by the end of 2018.

17. Any appeal of these Findings and Recommendations must be taken in accordance with Rule 2.16 of the Commission's Rules of Practice and Procedure.

PROPOSED ORDER

1. Delmarva Power is permitted to file the Gabel & Associates Report effective as of the date of the Commission's Order.

2. The parties and the Hearing Examiner shall work out an Amended Procedural Schedule suitable to all parties which affords each party a sufficient amount of time to conduct discovery as to the Report.

DATED: July 11, 2018

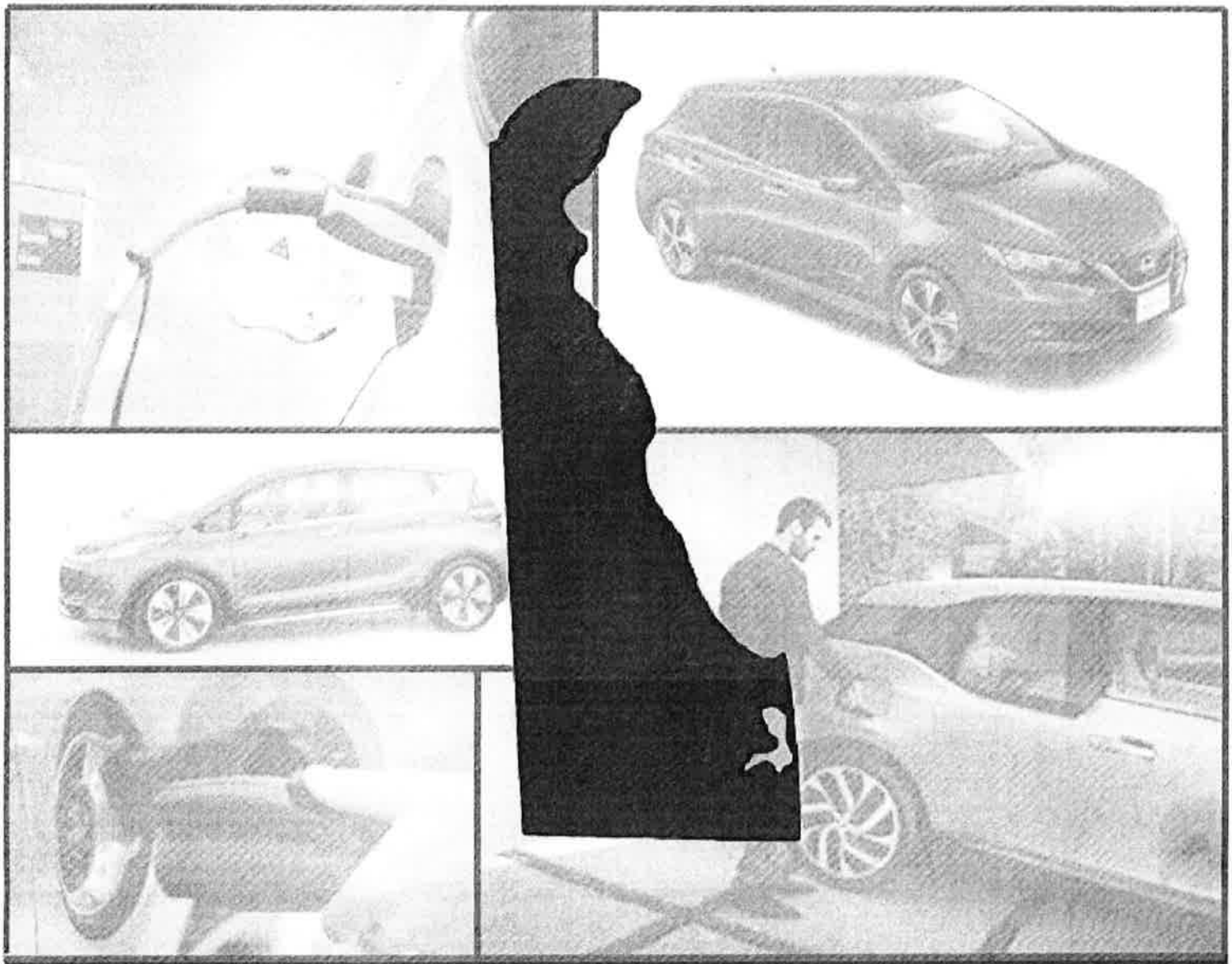
Respectfully submitted,

Mark Lawrence
Senior Hearing Examiner

EXHIBIT "1"

delmarva power

An Exelon Company



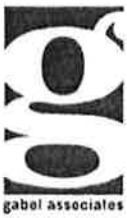
Benefit Cost Analysis For Electric Vehicle Adoption In The Delaware DPL Territory

Prepared By Gabel Associates, Inc.

July 6, 2018

Acknowledgements

Study and Report Prepared By:



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Study Team:

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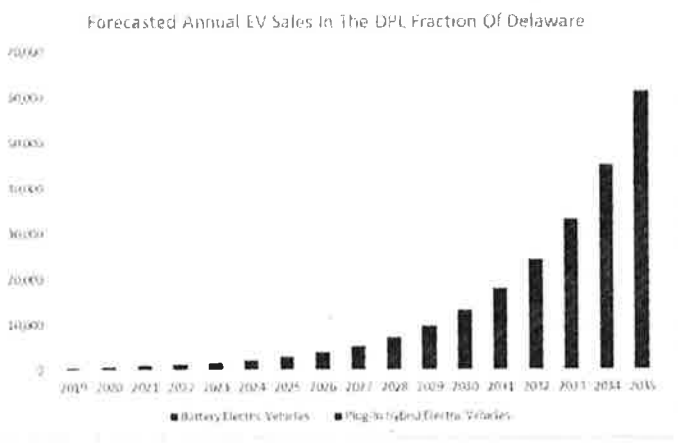
1 Executive Summary

The widespread adoption of Electric Vehicles (EVs) is an emerging trend that is expected to have a profound impact on both personal mobility and electricity markets and infrastructure. As EV use increases, consumers are projected to realize substantial benefits: non-EV owners will benefit from lower electricity costs, and reduced air emissions, while EV owners will realize substantial savings on vehicle operating expense. To both support and enable this opportunity, Delmarva Power and Light (DPL) is proposing a new program for its Delaware territory, with a focus on providing vehicle charging infrastructure, supportive new rate structures, and other innovations. These utility programs provide necessary support for the growing base of EV owners that are now using "electricity as fuel", and will also address known consumer adoption barriers to increase the use of EVs in the DPL-DE territory so that the resulting benefits can be realized by its customers.



This study quantified the projected overall benefits and potential costs of increased EV adoption in the DPL-DE territory, and estimated the NET benefit that will result using three different net benefit tests. The analysis covers the period from 2019 through 2035, and is based on a projection of EV adoption that reflects recent EV sales in Delaware and expected sales rates appropriate for the territory. The projected EV adoption rate achieves approximately 26% penetration of the light duty fleet by 2035. This transition is projected to eliminate the use of 310 million gallons of gasoline, add 2,152.3 GWhrs of electricity consumption, and avoid the emission of 2,076,234 tons of CO_2 over the period. An average Delaware household with one EV is projected to increase its electricity consumption by about 20.4%.

The study is based on detailed simulation of energy market response to EV-induced changes to aggregate load, analysis of DPL tariffs, billing determinants, and revenue requirements, and territory-specific research on travel, consumption, and charging behavior statistics. The resulting specialized model allows for detailed quantification of physical impacts arising from widespread EV adoption, including impacts on electricity use and the environment, while also estimating potential costs to allow for a NET benefit cost analysis over the study period.

In addition to detailed simulation and territory-specific modeling, the analysis considered the specific EV-support program being proposed by DPL for their Delaware customers. The study recognizes two motivations for the proposed utility programs: 1) serving a growing new need by consumers (vehicle charging) in a responsible way, and 2) addressing consumer adoption barriers to encourage higher levels of EV adoption and use. The proposed utility programs create infrastructure which is *needed* to ensure prudent utility accommodation of this new consumer load, and to facilitate realization of the expected benefits in an equitable way. These proposed programs are also *desired*, since they lower consumer adoption barriers, jumpstart increased EV adoption short term, and seed the market for long term growth so as to achieve the widespread EV adoption that benefits for utility customers (and others).

Key conclusions from the benefit analysis (without consideration of cost) include:

- EV-induced benefits are substantial: When considering the broad range of benefits that result from increased EV use, **Delaware residents in the DPL territory will realize a total savings of $996M over the period (nominal sum of recurring annual savings), with an NPV of $478M. This study makes clear that benefits are realized by utility customers that do not drive EVs through lower electricity costs, society at large benefits through cleaner air, and EV owners benefit from reduced vehicle operating expense and federal vehicle purchase incentives.**

- Electricity costs are projected to go down for all utility customers: Electricity rates (including basic wholesale supply, capacity and transmission costs, and utility distribution costs) for ratepayers are projected to go down due to increased EV use. These cost reductions are a result of a) increased overall electricity consumption (which dilutes fixed costs), and b) reductions in wholesale prices due to the fact that most EV charging will be at night during lower-cost off-peak times. **Savings for ratepayers are projected to total $326M over the period (nominal sum of recurring annual savings), with an NPV of $170M.** These savings accrue to utility customers that don't own EVs and EV drivers alike.

- Vehicle operating costs are expected to drop by about half: EV drivers will realize significant savings through reduced operational expense on a recurring annual basis. **In 2019 it will cost approximately 11.95 cents/mile to fuel an average traditional vehicle with gasoline, compared with approximately 6.16 cents/mile for EVs (for both BEVs and PHEVs, blended results) – a reduction of about 48.4%.** Reduced fueling costs, plus lower maintenance costs, are projected to deliver an estimated $1B in vehicle operating expense savings for EV owners (nominal sum of recurring annual savings), with an NPV of $474M through 2035. Widespread EV adoption frees up disposable income for Delaware households, and is expected to pump additional revenue into the local economy rather than importing petroleum products.

- Widespread EV use reduces air emissions, which has economic value in addition to its positive impact on the environment and public health: The study quantifies the NET change in air emissions that result from EV use, considering the reduction in tailpipe emissions net of increased power plant emissions due to increased electricity use. Key greenhouse gases such as CO2 reduce substantially, so that each electrically fueled mile is projected to have 63.8% less CO2 emissions per mile than an average gasoline fueled mile (in 2019). Other key criteria pollutants, especially NOx which has a direct impact on public health, also decline, with a 15.4% reduction projected over the period. There is value in the reduced air emissions that result from fueling with electricity rather than gasoline. **Society will realize a projected $269M in savings through 2035 (nominal sum of recurring annual savings) due to avoided emissions (especially CO2, and NOx), with an NPV of $124M.**

- EV charging will change loading on the grid, potentially to the benefit of all utility customers. By displacing gasoline use with electricity through vehicle charging, there is projected to be a significant increase in electricity consumption over time. Much of this charging will be done in a residential setting overnight. **By 2035, 21.6% of all light duty vehicle miles driven are expected to be "electrically fueled", which for that year will reduce gasoline consumption by 82,369,166 gallons, and increase electricity use 572,058 MWhrs.** Since this is a large load, and since the timing of those loads can be influenced to happen at optimal times (see managed

charging below), these changes represent a profound opportunity for load optimization and improved asset utilization (of all types) – both of which reduce electricity costs as noted above.

- Managed charging is a unique opportunity to ensure and maximize EV-induced benefits, but requires active measures to achieve. Most vehicle charging will be done at home, but EV drivers could charge at any time of the day. In a worst case scenario, if all drivers "plug in" as soon as they get home from work, vehicle charging could introduce significant new load at the worst possible peak time, resulting in higher electricity costs for all consumers. There is a natural bias, however, for residential charging to happen overnight, and there is some flexibility in when that charging happens – so long as the vehicle is fully charged in time for use the following morning. While optimal charge scheduling is not a natural consumer behavior, utility sponsored programs can be implemented to encourage optimal charge scheduling – referred to in this document as "managed charging". Managed charging implies conditions where the start of residential charging is deferred until after peak time, *and* vehicle charging is spread out over a full eight hour period over-night. Under scenarios where this type of managed charging is dominant, EV induced load increases during the PJM-coincident peak are expected to be modest: **vehicle charging adds a projected 0.263 MW of load at peak time in 2019, growing to 36.549 MW in 2035. The fact that charging-induced electricity consumption increases significantly, while peak loading increases only slightly, implies a significant increase in the capacity factors for both the generation base and infrastructure (transmission and distribution), and a much flatter aggregate load profile with more consumption in off-peak periods. This outcome is a key driver of the economic benefits outlined above, along with the dilution of fixed costs as detailed further below, and is especially important since it applies to all electricity consumers.** To achieve this outcome, however, managed charging programs must be implemented to encourage optimal consumer charging behaviors. Longer term, managed charging programs could evolve to more sophisticated vehicle to grid (V2G) programs that deliver additional economic advantage by using EV batteries to shave peak load and reduce electricity costs further.

- Benefits induced by widespread EV use outweigh potential costs, and those benefits accrue to all utility customers, society at large, as well as EV owners. Potential costs associated with widespread EV adoption were quantified as part of the study, including the costs of the proposed DPL-DE program for infrastructure deployment, the costs of potential long term grid reinforcement that may be required, and investments made by others as part of EV use, including both vehicle purchase premiums and charging infrastructure investment. These benefits and costs were used to determine a NET benefit using three merit tests, each of which combines benefits and costs differently to provide a range of perspectives on economic merit. The three tests were adapted specifically for EV market characteristics, and include a Rate Impact Measure (RIM), the Societal Cost Test (SCT) and the Total Resource Cost (TRC). All three merit tests demonstrate strong NET benefit, including both benefit/cost ratios greater than 1.0, and NET benefits (after considering costs) that are positive. A summary of key benefits, costs and NET impact are provided in the chart below[a].

[a] The benefits noted in this chart include the recurring annual savings for utility customers (through lower electricity costs), EV drivers (through lower operating expense), and society at large (based on the value of lower emissions), combined with the one-time benefits realized by EV owners through the federal vehicle purchase tax incentive.

Benefit/Cost Summary			
Total Benefits (NPV, 2019-2035):	$827,034,789		
Total Costs (NPV, 2019-2035)	$312,943,596		
	RIM	SCT	TRC
Benefit To Cost Ratio (based on NPV):	2.92	2.64	2.25
Net Benefit (benefit minus costs, NPV):	$112,058,830	$514,091,193	$390,544,344

The RIM test specifically considers benefits for all utility customers through lower electricity costs resulting from EV adoption as balanced by recovery of utility investments through rates. The positive RIM test results demonstrate that utility customers, even those that don't drive an EV themselves, realize savings from lower electricity costs that exceed investments being recovered by the utility.

In Conclusion: the study quantified benefits that apply across a broad range of populations, along with associated potential costs, so that NET benefit merit tests could be conducted. The detailed projections developed in the study demonstrate that benefits exceed costs, and that there is NET benefit across multiple stakeholder groups which justifies the utility programs being proposed. These benefits result from a broad portfolio of impacts including lower electricity costs for all utility customers, increased disposable income for Delaware households due to lower vehicle operating costs, and the multiple benefits of reduced air emissions. The adapted TRC and SCT tests demonstrate that society at large, and particularly residents within the territory, are better off as a result of widespread EV adoption even after considering a broad range of costs. More specifically, the RIM test demonstrates that utility customers realize lower electricity costs that offset proposed and potential investments that would be recovered by the utility through rates. These results demonstrate that the proposed utility programs directly benefit DPL-DE customers (in addition to EV owners), and that the public interests are well served by approval and implementation of the proposed programs.

2 Introduction

The widespread adoption of Electric Vehicles (EVs) is an emerging trend that is expected to have a profound impact on both personal mobility and electricity infrastructure. As EV use increases, a wide range of beneficial impacts are anticipated, including lower electricity costs, reduced air emissions, and substantial savings for EV owners. In response to this opportunity, Delaware Power and Light (DPL) is proposing a new program for its Delaware territory, with a focus on providing vehicle charging infrastructure, supportive new rate structures, and other innovations. These utility programs provide necessary support for the growing base of EV owners that are now using "electricity as fuel", and will also address known consumer adoption barriers to increase the use of EVs in the DPL-DE territory.

Exelon/PHI, DPL's parent, commissioned an in-depth study of the projected impacts of increased EV adoption, identification of specific benefits for a range of populations, and associated costs. The resulting benefit-cost analysis quantifies the NET benefit that results from widespread EV adoption in the DPL-DE territory, including consideration of the costs associated with the proposed utility program to support and encourage that level of EV use (among other factors). The study was conducted by Gabel Associates (Gabel), a consulting firm with well-established expertise in energy, environmental, utility, and policy research. The benefit-cost analysis builds on experience gained conducting similar studies in other jurisdictions.

This document summarizes the benefit-cost analysis, including methodology review, quantification of the benefits expected to result from the program, an inventory of potential costs, and formal net benefit-cost test results.

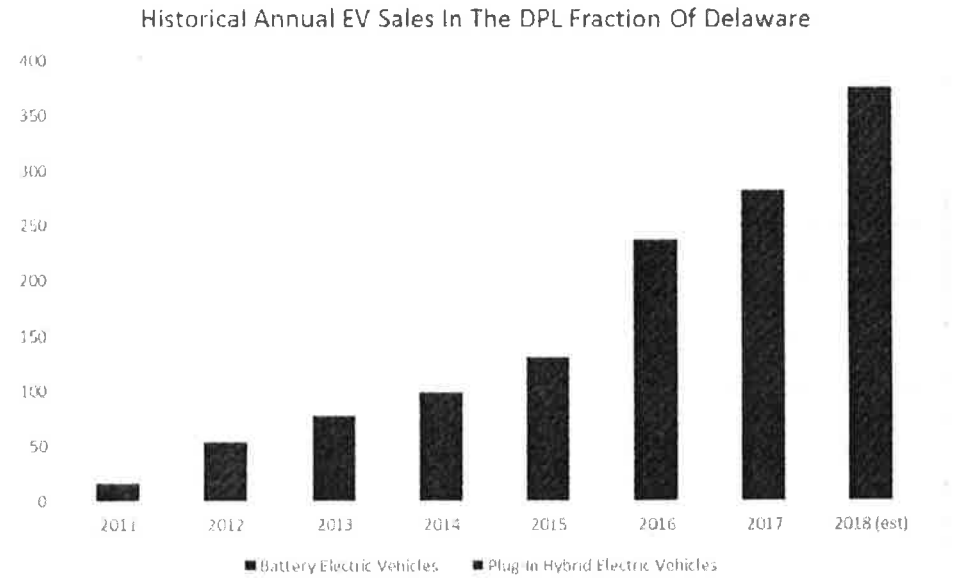
3 Electric Vehicle Adoption Forecast

The study is based on a forecast of EV adoption within the DPL-DE territory from 2019 through 2035. The forecast is based on historical EV sales in the territory[1], extrapolated over the period based on annual sales growth rates consistent with projected market conditions for the territory. The extrapolation accounts growth of the EV fleet through new sales, as well as vehicle retirements[2]. This forecast is the basis for all the impact and benefit analysis, and allows consideration of overall EV adoption impact, not just the impact of the utility program as a stand-alone entity. This approach is appropriate since the proposed utility program is impacting the market simultaneous with other developments that serve to increase EV adoption (lower vehicle costs, increasing vehicle configuration options, growing consumer awareness, etc.). The proposed utility programs are considered an important part of these market growth assumptions, however, since they directly impact key consumer adoption barriers (home charging infrastructure, especially in the challenging multi-family segment, increased public charging availability, improved consumer awareness, etc.)[b]. The proposed utility programs are necessary to respond to a new consumer need (vehicle charging), but also jumpstart EV adoption short term by lowering barriers, seeding the market for long term growth to ensure optimal and equitable realization of benefits across multiple populations.

[b] The proposed utility programs lower adoption barriers, in addition to establishing an important foundation in managed charging.

The forecast (and subsequent analysis) focuses on light duty vehicles (cars, and light passenger trucks such as SUVs) being displaced by "Electric Vehicles", including both pure battery electric vehicles (BEVs), and plug-in hybrid electric vehicles (PHEVs). Both vehicle classes "have a plug", and are able to store electricity in a battery or similar device from a source external to the vehicle. Vehicles "without a plug", such as traditional NON-plug-in hybrids, are not included. The analysis focuses exclusively on light duty vehicles, and does not consider medium or heavy duty vehicle electrification that may be occurring simultaneously.

The following chart summarizes recent EV sales within the DPL-DE region:

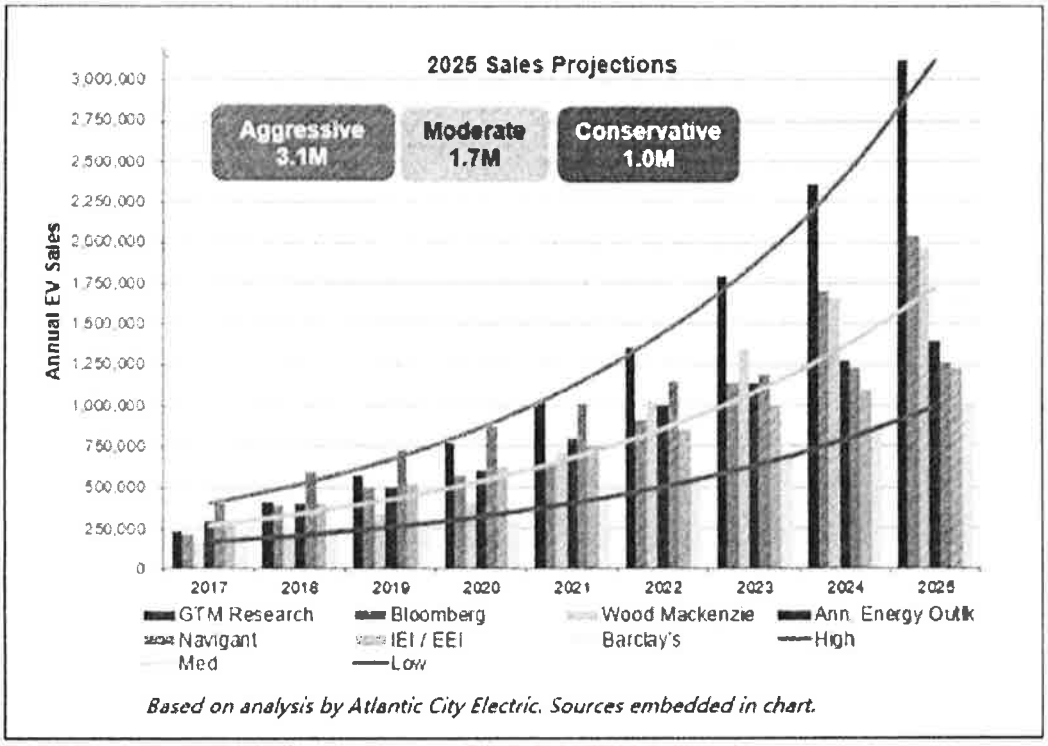


The forecast is based on the EV fleet size in 2018 projected at a 40% growth rate for BEVs, and a 30% growth rate for PHEVs, resulting in a blended growth rate of 34.9%[3]. These growth rates were selected based on consideration of a variety of market growth factors specific to the DPL fraction of the Delaware market:

- EV penetration on a per capita basis in Delaware has been significantly below the national average to date: there are 1.32 EVs per 1,000 residents in Delaware as of the end of 2017, compared with a ratio of 2.21 nationwide, and 8.9 for the leading state California. Leading ZEV states are typically in the range of 2.0 to 3.8 EVs per 1,000 people (as of the end of 2017).

- Despite that relatively small starting base, sales have strengthened recently. Delaware annual sales growth averaged 50.6% over the last two years. For reference, national EV sales demonstrated year/year growth of 36.6% in 2016, 25.9% in 2017, and 35.5% YTD 2018 (through April). These rates are the AVERAGE nationwide, with leading states demonstrating significantly higher growth.

- A wide variety of consulting and market studies have projected EV adoption long term, with estimates generally becoming much more bullish as the market matures. The following chart summarizes the range of projections, which reflect concurrence for "moderate" growth levels being approximately 25%.



Based on analysis by Atlantic City Electric. Sources embedded in chart.

- Average median household income in Delaware is slightly above the national average ($61,017 averaged 2012-2016, compared with ~$57,00 for the U.S. overall (2016), U.S. Census Bureau), which is a positive indicator for strong EV sales. Other demographic factors are particularly strong for EV adoption: a) 92.7% of households have at least one vehicle[4], b) only 17.6% of homes are multi-family, and 70.9% of homes are owner occupied[5], and c) per-capita vehicle ownership is relatively high: 1.2 vehicles per person in 2015[6].

- Delaware has introduced incentives for both vehicle purchase and charging infrastructure, which have likely contributed to the recent increase in EV sales. If continued, and especially with the proposed utility program to provide additional incentives and reduction of market barriers, the recent strong annual sales rate are projected to be sustainable long term.

- Given this combination of factors, and assuming continuation of existing incentives and implementation of utility programs that lower adoption barriers, annual sales growth in Delaware is projected to remain above the national average. That results in the state starting with a relatively small base, but with strong growth long term (especially after 2025). These factors support the estimated growth rates of 40% for BEVs and 30% for PHEVs (34.9% blended rate).