STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

I/M/O The Merger of Exelon Corporation And PEPCO Holdings, Inc.	))	**BPU Docket No. EM14060581**

DIRECT TESTIMONY OF

TYLER COMINGS

ON BEHALF OF THE DIVISION OF RATE COUNSEL

STEFANIE A. BRAND, ESQ.
DIRECTOR, DIVISION OF RATE COUNSEL
140 East Front Street, 4th Floor
P.O. Box 003
Trenton, New Jersey 08625
Phone: 609-984-1460
Email: njratepayer@rpa.state.nj.us

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PUBLIC VERSION

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I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q Please state your name, business address, and position.

A My name is Tyler Comings. I am a Senior Associate with Synapse Energy Economics, Inc. (Synapse), which is located at 485 Massachusetts Avenue, Suite 2, in Cambridge, Massachusetts.

Q Please summarize your work experience and educational background.

A I have nine years of experience in economic research and consulting. At Synapse, I have worked extensively on the energy planning sector, including economic impact analyses for Vermont energy efficiency programs for the Vermont Department of Public Service, a proposed Renewable Portfolio and Efficiency Standard in Kentucky for Mountain Association for Community Economic Development (MACED), a "Beyond Business as Usual" energy future for the U.S. for Civil Society Institute (CSI), and a proposed carbon standard for Natural Resources Defense Council (NRDC). I have worked on several cases involving coal and gas plant economics. I have provided consulting services for various other clients including: U.S. Department of Justice, District of Columbia Office of the People's Counsel, New Jersey Division of Rate Counsel, West Virginia Consumer Advocate Division, Illinois Attorney General, Nevada State Office of Energy, Sierra Club, Earthjustice, Citizens Action Coalition of Indiana, Consumers Union, Energy Future Coalition, American Association of Retired Persons, and Massachusetts Energy Efficiency Advisory Council.

Prior to joining Synapse, I performed research in consumer finance for Ideas 42 and economic analysis of transportation and energy investments at Economic Development Research Group.

I hold a B.A. in Mathematics and Economics from Boston University and an M.A. in Economics from Tufts University.

My full resume is attached as Attachment TFC-1.

Q Please describe Synapse Energy Economics.

A Synapse Energy Economics is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, ratemaking and rate design, electric industry restructuring and market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government agencies, and utilities.

Q On whose behalf are you testifying in this case?

A I am testifying on behalf of the New Jersey Division of Rate Counsel (Rate Counsel).

Q Have you submitted testimony in other recent regulatory proceedings?

A Yes. I have submitted testimony before the Indiana Utility Regulatory Commission (Cause No. 44339) and the Kentucky Public Service Commission (Case No. 2013-00259). I also submitted testimony on the proposed merger between Exelon Generation and Pepco Holdings, Incorporated (PHI) for District of Columbia Government before the DC Public Service Commission (Formal Case No. 1119).

Q Have you testified in front of the New Jersey Board of Public Utilities previously?

A No, I have not.

Q Have you conducted economic impact analyses previously?

A Yes. I have conducted many economic impact analyses using both REMI and IMPLAN models—the latter being the model used by Witness Tierney in this proceeding. At Economic Development Research Group, starting in 2005, I

conducted economic impact analyses of highway projects, airports, and renewable energy and energy efficiency investments. At Synapse, I have continued to model the economic impacts of energy resource investments.

Q What is the purpose of your testimony?

A I was retained by Rate Counsel to review the Joint Petitioners' filing of the proposed merger ("the Merger"). My testimony focuses on the economic impact analysis of the merger as presented in the direct testimony of the Joint Petitioners' witness Susan F. Tierney.

Q Are there any exhibits that accompany your testimony?

A Yes. I am attaching my resume as Attachment TFC-1 and an excerpt from a data response from the Joint Petitioners as CONFIDENTIAL Attachment TFC-2.

Q Was your testimony prepared by you or under your direct supervision?

A. Yes.

II. SUMMARY OF TESTIMONY

Q Do the Joint Petitioners claim that the merger will have a positive impact on the New Jersey economy?

A Yes. The Joint Petitioners present an economic impact analysis of the merger, claiming that it is "expected to generate between 2,619 and 3,646 new jobs in New Jersey," [1] between $265.3 and $386.8 million in "value added" to the New Jersey Economy, and between $24.7 and $33.8 million in incremental tax revenues.[2] However, as discussed below, the economic impact estimates put forth by the Joint Petitioners are overstated.

[1] BPU Docket No. EMI 1406, Verified Joint Petition, paragraph 3.
[2] Direct Testimony of Susan M. Tierney, page 35, lines 1-8 and Table SFT-5. Dollars are in terms of net present value (NPV).

Q On what aspects of the merger do the Joint Petitioners base the economic impact estimates?

A Witness Tierney estimates direct economic impacts of the merger based on the Joint Petitioners' $29 million proposed Customer Investment Fund ("CIF") and an estimated value to customers of reliability improvements compared to Atlantic City Electric's ("ACE") historical (2011-2013) reliability performance. Witness Tierney then used the IMPLAN model for New Jersey to estimate the multiplier or "ripple" effects of 1) the CIF spending—used either as a bill credit or towards energy efficiency investment—and 2) the estimated economic value of assumed reliability improvements for residents and businesses.

The total job impacts are largely due to assumed reliability improvements (2,419 "new jobs") and the remainder is due to the CIF (200 "new jobs" assuming direct bill credit or 1,227 "new jobs" assuming it is used on energy efficiency investments). The low and high range of between 2,619 and 3,646 total "new jobs" are simply the addition of the reliability impacts and low and high range of impacts from the CIF. As with the job impacts, the estimated economic value-added and tax revenue impacts are mostly due to reliability: $221 million in value-added and $23 million in tax revenue.[3]

Q Did the Joint Petitioners look at economic impacts other than those created by the CIF and the reliability improvements?

A No. The Joint Petitioners have only presented the economic impacts of the proposed CIF and the value of assumed reliability improvements to customers. The Joint Petitioners have chosen to focus on only two aspects of the merger rather than a broader view of the economic impacts.

Q Do you agree with Witness Tierney's projections of the economic benefits of the merger?

A No. As addressed in detail below, her estimate of the jobs created is flawed since it does not properly reflect anticipated job losses. Moreover, she assumes that ACE maintains its historical performance (2011-2013) without accounting for

[3] [3] Direct Testimony of Susan M. Tierney, Table SFT-5. Dollars are in terms of net present value (NPV).

recent and continued reliability improvements that would occur absent the merger. Witness Tierney has not demonstrated that the claimed reliability improvements are incremental improvements attributable solely to the merger commitments proposed by the Joint Petitioners. Hence, her estimate of reliability-related economic benefits is likely overstated. Furthermore, any reductions in her job projections and reliability-related economic benefits would also decrease her estimate of Incremental Tax Revenues and value-added.

Q Did the Joint Petitioners omit any important negative impacts?

A Yes. Joint Petitioners' witness Christopher M. Crane plainly states that "the merger will result in some reductions in force."[4] The Joint Petitioners have proposed a commitment not to involuntarily reduce the ACE workforce for two years after the merger is consummated.[5] However, this does not account for reductions from occurring thereafter. Also, this commitment does not apply to the PHI non-utility workforce, which could be reduced immediately after the merger is consummated. The job losses, and the resulting negative economic impacts, should be taken into account in evaluating the overall impact of the merger.

Q Did you find any other flaws in Joint Petitioners' economic analysis?

A Yes. The presentation of economic impacts is misleading and the reliability improvements--the largest driver of impacts--do not necessarily create jobs.

First, the Petition refers to 2,619 and 3,646 "new jobs" in New Jersey from the merger.[6] A reader could easily assume that the Joint Petitioners are estimating the addition of thousands of long-term additions to New Jersey's workforce. However, these impacts actually represent the total job-years over the ten-year analysis period (2015-2024). A "job-year" is the equivalent of one job being performed for one year—e.g. one job being performed over ten years is equal to ten job-years. The average impact over the 10-year period is between 262 and 365

[4] Direct Testimony of Christopher M. Crane, page 19, lines 14-15.
[5] Direct Testimony of Christopher M. Crane, page 19, lines 17-20.
[6] BPU Docket No. EMI 1406, Verified Joint Petition, paragraph 3.

jobs, one-tenth the number that would be inferred from a reading of the Joint Petition.

Second, the majority of job impacts come from assumed reliability improvements that may not materialize in the economy: an estimated 242 average jobs per year or 2,419 job-years over the 10-year period. The effects of reliability from the merger should be the difference between what the Joint Petitioners are proposing versus what ACE would do absent the merger—which is likely better than its historical performance in 2011 to 2013 or the RIP commitments. As discussed by Rate Counsel Witness Maximilian Chang, the Joint Petitioners compared their projected reliability goals to ACE's (2011-2013) historical reliability performance as a baseline. This ignores the following: 1) ACE is already subject to Reliability Improvement Plan ("RIP") commitments, 2) ACE has recently improved upon its 2011-2013 reliability performance (also outperforming the 2016 RIP commitment)--using the most recent quarterly reliability data in 2014[7] and 3) ACE is likely to continue to improve upon its past performance, absent the merger. If ACE continues to outperform these commitments or the Board imposes more stringent reliability standards than the RIP, then the estimated economic effects of the merger on reliability would be mitigated or nullified.

Finally, the job impacts from the assumed reliability improvement are derived first by estimating the "value" of avoided outages and then calculating the estimated impacts from that value. The value of avoided outages is based largely on surveys of customers' willingness to pay for electricity service reliability.[8] However, the value that people and businesses ascribe to avoid outages does not clearly translate to jobs or to money in their pockets that can be re-spent.

Q Have the Joint Petitioners adequately shown that the merger will have positive benefits to the New Jersey economy?

A No. Currently, it is unclear if the "net" impacts of the merger are positive or negative using the Joint Petitioners' estimates. The negative economic impacts of

[7] Direct Testimony of Maximilian Chang, Figure MPC-2. ACE's 2014 2nd quarter reliability statistics were 1.29 for SAIFI and 92 for CAIDI compared to 2016 RIP requirements of 1.3 for SAIFI and 123 for CAIDI.
[8] See: http://www.icecalculator.com/ice/relevant-reports.htm

job reductions at both ACE and PHI non-utility subsidiaries within the state should be accounted for in order to get a more complete view of the effect of the merger on the economy of New Jersey. Instead, the Joint Petitioners have chosen to present a positive, lopsided view where no jobs are lost in the state in ten years due to the merger. The economic impacts of the merger are, therefore, grossly incomplete.

Q Should the Board of Public Utilities accept the Joint Petitioners' economic impact analysis?

A No. The analysis should be rejected mainly because the Joint Petitioners' economic impact analysis failed to consider negative impacts from job reductions due to the merger and likely overstated the positive impact of reliability improvements. As it stands, the Joint Petitioners have failed to adequately show "that positive benefits will flow from the merger to customers and the State of New Jersey."[9]

III. THE JOINT PETITIONERS' CLAIMED MERGER BENEFITS

A. THE ECONOMIC IMPACTS IGNORE JOB REDUCTIONS

Q Did the Joint Petitioners anticipate that there would be job reductions due to the merger?

A Yes. Witness Christopher Crane plainly states that "the merger will result in some reductions in force."[10] In addition, witness Carim M. Khouzami states:

> The Merger of Exelon and PHI will create the opportunity to realize savings by eliminating overlap and duplication in company-wide operations, realizing economies of scale and streamlining corporate functions.[11]

[9] See N.J.A.C. 14:1-5.14.
[10] Direct Testimony of Christopher M. Crane, page 19, lines 14-15.
[11] Direct Testimony of Carim M. Khouzami, page 27, lines 17-19.

Q Did the Joint Petitioners estimate direct job reductions in ACE's workforce due to the merger?

A No. Witness Christopher Crane discusses the Joint Petitioners' two-year commitment not to impose involuntary reductions of employment at PHI utility subsidiaries, including ACE.[12] However, this does not prevent reductions from occurring after the two-year commitment period ends. When asked to estimate the impacts from changes in the ACE workforce due to the merger, Witness Tierney responded that she could not since "the Joint Petitioners have not yet made estimates of any annual changes in ACE workforce due to the proposed merger."[13]

Q Did the Joint Petitioners estimate reductions in PHI non-utility workforce in New Jersey due to the merger?

A Not for New Jersey, specifically. Witness Khouzami presents an analysis of "net synergy estimates" from the merger, including a "glidepath of O&M synergies," which shows estimated savings from job reductions at Exelon and PHI starting in the first year.[14] The merger was estimated to result in a **[Begin Confidential]** [redacted] **End Confidential]**[15] However, it is unclear how many New Jersey employees would be cut or re-located due to the merger.

Q Did the Joint Petitioners estimate economic impacts from workforce reductions?

A No, unfortunately. According to the Joint Petitioners' responses to Rate Counsel discovery requests, there are 533 current employees at ACE and 514 employees of PHI Service Company and Pepco Energy Services ("PES") are located in New Jersey.[16] Both sets of employees could be affected during the ten-year period modeled in Witness Tierney's analysis. The Joint Petitioners' commitment not to impose involuntarily reductions in the utility's New Jersey workforce will be in

[12] Direct Testimony of Christopher M. Crane, page 19, lines 17-20.
[13] Data Response to RCR-ECON-64.
[14] Exhibit CVK-2, slide 6.
[15] RCR-SS-19 Attach 01 (CONFIDENTIAL), page 62 of 78. Attached as Confidential Attachment TFC-2.
[16] Data Response to RCR-ECON-29. Includes PHI Service Company (435 employees) and PES (79 employees).

effect for only two years. Further, the two-year commitment does not apply to the PHI corporate and non-utility subsidiaries such as PES or PHI Services Company. Therefore, non-utility workers could be reduced immediately after the merger is consummated which would also have ripple (or "multiplier") effects on the state. Nevertheless, Witness Tierney "has not modeled any economic implications associated with that two-year commitment or any potential involuntary attrition after this period."[17]

Q Should the economic impact results presented by the Joint Petitioners be considered complete?

A No. The analysis is incomplete without consideration of the ACE, PHI, or PES jobs in New Jersey that will be lost and the ripple effect of those lost jobs in the future as a result of the merger. PHI non-utility employees at long-term positions could be cut immediately and ACE utility employees could be reduced when the two year commitment ends. Any negative economic impacts of job reductions at both ACE and PHI non-utility subsidiaries should be accounted for in order to get a more complete view of the effect of the merger on the economy of New Jersey. Currently, it is unclear if the "net" impacts of the merger are positive or negative using the Joint Petitioners' estimates. The economic impacts of the merger are, therefore, incomplete.

B. THE PRESENTATION OF POSITIVE ECONOMIC IMPACTS IS MISLEADING

Q How do the Joint Petitioners present their estimates of the impact of the merger on employment in New Jersey?

A In terms of jobs, Witness Tierney presents a range of 2,619 to 3,646 "new jobs" in New Jersey from the merger.[18] Witness Christopher Crane also discusses "the creation of between 2,619 and 3,646 jobs in New Jersey."[19]

[17] Data Response to RCR-ECON-19.
[18] Direct Testimony of Susan F. Tierney, page 7, line 6.
[19] Direct Testimony of Christopher M. Crane, page 18, line 6.

Q Does this result mean that the Joint Petitioners are estimating 2,619 to 3,646 additions to the New Jersey workforce as a result of the merger?

A No. These impact results actually represent the job-years (i.e., cumulative job impacts per year) over the ten-year analysis period (2015-2024).

Q Please explain the difference between jobs and job-years.

A A job-year is the equivalent of one full-time job being performed for one year. This can be a useful measure in that it can represent both short- and long-term activities. However, it should be reported clearly and distinguished from "new jobs." For instance, one long-term job being performed for ten years compared to ten short-term jobs needed for only one year (such as in construction) are both equal to ten job-years. To report these ten job-years as ten "new jobs" could lead one to conclude that ten more long-term jobs would be created, when this is not the case. Based on the examples above, the result could be reported as one long-term job or ten jobs that only last one year, or ten "job-years."

Q How do the Joint Petitioners' annual economic impact estimates compare to the total workforce in New Jersey?

A The average job impact from the Joint Petitioners' estimates over the 10-year period is between 262 to 365 jobs.[20] According to the latest annual data available from the Bureau of Labor Statistics, New Jersey employs almost four million workers.[21] The high range of annual impacts would represent a 0.009 percent increase in jobs.[22] Even the highest annual impact estimate of 803 jobs in 2020 (in the EE spending scenario presented in Table 1) represents 0.02 percent of the current New Jersey workforce. In the month that the Joint Petitioners filed the

[20] This is done by dividing the total job-years by the number of years. Using the low end of the range (2,619 job-years) translates to 262 average jobs per year. Using the high end of the range (3,646 job-years) translates to 365 average jobs per year.

[21] Bureau of Labor Statistics (BLS), State and Area Employment Annual Averages, 2013. Available here: http://www.bls.gov/sae/eetables/sae_annavg113.pdf.

[22] This percentages comes from dividing 365 jobs by the 3,934,800 existing jobs in NJ, according to the latest BLS figure.

petition (June 2014), the state's economy added 7,300 jobs compared to the previous month.[23]

Q How is the original presentation of job impacts by the Joint Petitioners misleading?

A Someone reading "new jobs" may assume that the numbers represent long-term additions to the workforce in New Jersey when, in fact, they are cumulative job-years. All of the job impacts presented by the Joint Petitioners represent short-term impacts from bill credits, energy efficiency savings or increased reliability that may or may not occur in each year. Importantly, the only positive job impacts that occur after 2020 are in the scenario that assumers the CIF is spent on EE, where jobs resulting from energy savings are presumed to continue throughout the 10-year period modeled by Witness Tierney. In the scenarios assuming that the CIF is spent on direct bill credits, the job impacts occur only in one year, 2015. The job impacts from reliability—which, as noted, are likely overstated—continue only through 2020. Finally, as mentioned previously, these impacts do not capture long-term negative impacts in employment due to the merger.

C. THE ECONOMIC IMPACTS FROM RELIABILITY ARE LIKELY OVERSTATED

Q On what basis does Witness Tierney estimate the economic impacts of the merger?

A Witness Tierney uses the Joint Petitioners' pledges of a CIF and the proposed reliability commitments to develop the economic impacts of the merger. While the Joint Petitioners have not proposed a method of distributing the CIF, Witness Tierney looked at three scenarios for spending those funds: (1) direct bill credits to customers, (2) credits to low-income customers, and (3) energy efficiency (EE) investments. Each of these three CIF scenarios result in a direct stimulus to the New Jersey economy—to the extent that dollars are spent in the state—either through re-spending of bill savings or energy efficiency contractors and equipment. With respect to reliability improvement commitments, Witness

[23] Bureau of Labor Statistics (BLS), State Employment Seasonally Adjusted, Table D-1. Calculation is from DC employment in June 2014 (3,944,900) minus employment in May 2014 (3,937,600).

Tierney assumes that the improvements due to the merger will result in positive economic impacts based on customers' willingness to pay to avoid outages.

Q Do the assumed reliability improvements presented by the Joint Petitioners accurately characterize the effects of the merger?

A No. The effects of reliability from the merger should be the difference between what the Joint Petitioners are proposing versus what ACE would do absent the merger—which is likely better than its historical performance in 2011 to 2013 or the RIP commitments. As discussed by Rate Counsel Witness Maximilian Chang, the Joint Petitioners compared their projected reliability goals to ACE's (2011-2013) historical reliability performance as a baseline. This ignores the following: 1) ACE is already subject to Reliability Improvement Plan ("RIP") commitments, 2) ACE has recently improved upon its 2011-2013 reliability performance (also outperforming the 2016 RIP commitment)--using the most recent quarterly reliability data in 2014[24] and 3) ACE is likely to continue to improve upon its past performance, absent the merger. If ACE continues to outperform these commitments or the Board imposes more stringent reliability standards than the RIP, then the estimated reliability-related economic impacts of the merger would be mitigated or nullified.

Q How did Joint Petitioners value the economic impacts of improved reliability?

A The impacts from reliability are based on the value of the length and number of outages to customers. The underlying assumptions for this value is a component of the Interruption Cost Estimate ("ICE") calculator, which uses various estimates, in part relying on surveys of customers' willingness to pay for electricity service reliability.[25] Users can enter values for reliability measures with and without an improvement (such as SAIDI, SAIFI and CAIDI).[26] The tool then estimates the total change in the value of reliability benefits based on this

[24] Direct Testimony of Maximilian Chang, Figure MPC-2. ACE's 2014 2nd quarter reliability statistics were 1.29 for SAIFI and 92 for CAIDI compared to 2016 RIP requirements of 1.3 for SAIFI and 123 for CAIDI.
[25] See: http://www.icecalculator.com/ice/relevant-reports.htm
[26] SAIDI=System Average Interruption Duration Index; SAIFI= System Average Interruption Frequency Index; CAIDI= Customer Average Interruption Duration Index

assigned value of outages and change in reliability measures. However, the value that people and businesses ascribe to avoid outages does not clearly translate to jobs or to money in their pockets that can be re-spent. Therefore, unlike the CIF, and direct reliability spending, the Joint Petitioners' attributed value from reliability improvement commitments are not a direct, positive stimulus to the economy. Thus, the incremental impacts of reliability on the economy are more difficult to estimate compared to a more direct stimulus.

Q Can you illustrate the relative portion of the claimed positive benefits that is is attributable to reliability improvements?

Table 1 shows the high and low ranges of job impacts by year, as estimated by the Joint Petitioners, with a breakdown of impacts for reliability and the CIF direct bill and EE scenarios.

Table 1: Economic Impact Estimates by Year[27]

Year	(A) Job Impacts from CIF (Direct Bill Credit)	(B) Job Impacts from CIF (EE spending)	(C) Job Impacts from Reliability	(A + C) Low Range of Job Impacts	(B + C) High Range of Job Impacts
2015	200	371	110	310	481
2016	-	95	223	223	318
2017	-	95	339	339	434
2018	-	95	458	458	554
2019	-	95	581	581	676
2020	-	95	708	708	803
2021	-	95	-	-	95
2022	-	95	-	-	95
2023	-	95	-	-	95
2024	-	95	-	-	95
Cumulative Job-Years	**200**	**1,227**	**2,419**	**2,619**	**3,646**
Average Jobs	***20***	***123***	***242***	***262***	***365***
% of Impacts from Reliability				***92%***	***66%***

[27] BPU Docket No. EMI 1406, EXC-PHI0228 Tierney Workpapers - IMPLAN workbook and exhibits.xlsx

The high range of 365 average jobs per year is taken directly from the Joint Petitioners' scenario in which the CIF is used on energy efficiency investments, in addition to reliability impacts. This scenario generates its highest annual job impact in 2020 (with 803 jobs). After 2020, 95 jobs are generated in each year due to re-spending of efficiency savings. Over the 10-year period, this is the equivalent of 3,646 job-years (the high end of the range reported by Witness Tierney as "new jobs")--66 percent of these impacts are due to assumed value of reliability improvements (2,419 job-years) and 34 percent are due to CIF efficiency spending (1,227 job-years).

The low range of 262 average jobs per year is taken directly from the Joint Petitioners' scenario in which the Customer Investment Fund (CIF) is provided as a direct bill credit to ratepayers, in addition to reliability impacts. This scenario generates its highest annual job impact in 2020 (with 708 jobs) and no jobs in subsequent years. Over the 10-year period, this scenario produces the equivalent of 2,619 job-years (the low end of the range reported by Witness Tierney as "new jobs")--92 percent of these impacts are due to reliability improvements (2,419 job-years) and the remaining 8 percent are due to the CIF bill credit (200 job-years).

Q What portions of the Joint Petitioners' estimated "Value Added" and "Incremental Tax Revenues" are attributable to reliability improvements?

A The reliability improvements represent a majority of the value-added impacts: $221 million or 83% of the low range ($265 million) and 57% of the high range ($387 million). They also represent a majority of the tax revenue impacts: $22 million or 92% of the low range ($25 million) and 67% of the high range ($34 million).[28] My concerns about the valuation of reliability benefits and how they translate to jobs applies equally to the estimation of "value added" and "incremental tax revenues."

[28] Direct Testimony of Susan M. Tierney, page 35, lines 1-8 and Table SFT-5. Dollars are in terms of net present value (NPV).

Q Did you perform an analysis that incorporates different reliability assumptions?

A Yes. The Joint Petitioners compared their reliability goals to how ACE has performed historically. However, ACE has recently performed better than it has historically and has exceeded its 2016 RIP commitments in the second quarter of 2014.[29] If ACE continues to perform better than its historical average from 2011 to 2013, then the Joint Petitioners' comparison overstates the reliability improvement of the merger. To present an alternative future, I re-ran the US Department of Energy ICE calculator (the same method used by Witness Tierney) to derive the value of reliability improvements in each year with ACE's most recent 2014 quarterly data as a baseline.[30]

The results show a negative reliability impact from the merger, in aggregate, from 2015 through 2020 with -68 job-years or -7 average jobs per year.[31] The total job impacts (including the CIF impacts) would be between 13 and 116 average jobs per year assuming ACE maintains its most recent reliability levels. The total value-added impacts of this alternative (including the CIF impacts) range from $36.9 million to $158.4 million. The total tax revenue impacts of this alternative (including the CIF impacts) range from $1.2 million to $10.4 million. However, these impacts do not include job reductions due to the merger.

Q Should your analysis of reliability impacts be considered final?

A No. The alternative analysis illustrates that the reliability impacts are highly sensitive to the underlying assumptions and do not include impacts from job reductions due to the merger. At this time, I do not have a forecast of reliability performance for ACE. My analysis shows that if ACE maintains its most recent reliability metrics, then the impacts on reliability being claimed by the Joint Petitioners would be nullified. The Joint Petitioners should not take credit for any reliability improvements that would happen regardless of the merger.

[29] Direct Testimony of Maximilian Chang, Figure MPC-2. ACE's 2014 2nd quarter reliability statistics were 1.29 for SAIFI and 92 for CAIDI compared to 2016 RIP requirements of 1.3 for SAIFI and 123 for CAIDI.
[30] NJ – ICE results - TC.pdf
[31] EXC-PHI0228 Tierney Workpapers - IMPLAN workbook and exhibits-TC.xlsx

IV. FINDINGS AND RECOMMENDATIONS

Q What are your findings?

A The economic impact analysis, as presented by the Joint Petitioners, has the following flaws:

1. The economic impacts presented in the application ignore job losses. These negative economic impacts should be accounted for in order to get a more complete view of the effect of the merger on New Jersey. Unfortunately, the Joint Petitioners have neglected to take this critical component into account in the original economic impact estimates. Instead, they only present a positive, lop-sided view of the merger.
2. The positive economic impacts are misleading. Declaring 2,619 to 3,646 "new jobs" leads readers to assume that this represents long-term additions to the workforce in New Jersey. In reality, these are the accumulated job-years over a ten-year period. On average, the Joint Petitioners' are estimating an impact of an average of 262 to 365 jobs per year without including the negative impacts from job reductions due to the merger.
3. The economic benefits of the reliability improvements are likely overstated. The Joint Petitioners have likely overstated both the level of reliability improvement that should be attributed to the merger, and the impact such improvements would have on the State's economy. Reliability improvements would happen regardless of the merger if ACE continues to have better reliability than it has historically (2011-2013) or the Board imposes more stringent reliability standards. Even assuming such improvements could be attributed to the merger, they do not clearly lead to money in customers' pockets that could create economic activity.

Q What are your recommendations for the Board?

A For the reasons listed above, I recommend that the Board reject the economic impact analysis presented by the Joint Petitioners. The analysis does not address the full impacts on the New Jersey economy, including job reductions at ACE and

PHI non-utility subsidiaries due to the merger and likely overstates impacts due to reliability. Because of these flaws, the Joint Petitioners have not adequately demonstrated that the merger will have a positive impact on the New Jersey economy.

Q Does this conclude your testimony?

A Yes, but I reserve the right to update my testimony based on additional information provided by the Joint Petitioners.

ATTACHMENT TFC-1

Tyler Comings, Senior Associate

Synapse Energy Economics I 485 Massachusetts Avenue, Suite 2 I Cambridge, MA 02139 I 617-453-7050
tcomings@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Senior Associate,* July 2014 – present, *Associate*, July 2011 – July 2014.

Conducts research on energy system planning and coal plant economics, and performs economic modeling and analysis in support of a wide range of projects. Performs economic impact and benefit-cost analyses, statistical modeling, and research on environmental issues. Recent work includes developing economic impacts of energy efficiency programs in Vermont and a scenario of clean energy investments for the U.S.

Ideas42, Boston, MA. *Senior Associate*, 2010 – 2011.

Organized studies analyzing behavior of consumers regarding finances, and worked with top researchers in behavioral economics. Managed implementation and data analysis for a study of mitigation of default for borrowers that were at-risk of delinquency. Performed case studies for World Bank on financial innovations in developing countries.

Economic Development Research Group Inc., Boston, MA. *Research Analyst*, *Economic Consultant*, 2005 – 2010.

Performed economic impact modeling and benefit-cost analyses using IMPLAN and REMI for transportation and renewable energy projects, including support for Federal stimulus applications. Performed statistical modeling, including results on the timing of effects of highway construction on economic growth in Appalachia. Developed a unique Web-tool for the National Academy of Sciences on linkages between economic development and transportation, and presented findings to state government officials around the country. Created economic development strategies and improvements to company's economic development software tool.

Harmon Law Offices, LLC., Newton, MA. *Billing Coordinator, Accounting Liaison*, 2002 – 2005.

Allocated IOLTA and Escrow funds, performed bank reconciliation and accounts receivable. Projected legal fees and costs for cases at the firm.

Massachusetts Department of Public Health, Boston, MA. *Data Analyst* (contract), 2002.

Designed statistical programs using SAS based on data taken from health-related surveys. Extrapolated trends in health awareness and developed benchmarks for performance of clinics and other healthcare facilities for statewide assessment.

EDUCATION

Tufts University, Medford, MA
Master of Arts in Economics, 2007

Boston University, Boston, MA
Bachelor of Arts in Mathematics and Economics, 2002. *Cum Laude*, Dean's Scholar.

ADDITIONAL SKILLS

Software: MS Office, STATA, SPSS, SAS, REMI, IMPLAN, Mathematica
Programming: C++
Languages: Conversant in French

PUBLICATIONS

Takahashi, K. 2014. *Maximizing Public Benefit through Energy Efficiency Investments.* Synapse Energy Economics for Sierra Club.

Comings, T., S. Fields, K. Takahashi, G. Keith. 2014. *Employment Effects of Clean Energy Investments in Montana.* Synapse Energy Economics for Montana Environmental Information Center and Sierra Club.

Daniel, J., T. Comings, J. Fisher. 2014. *Comments on Preliminary Assumptions for Cleco's 2014/2015 Integrated Resource Plan.* Synapse Energy Economics for Sierra Club.

Fisher, J., T. Comings, D. Schlissel. 2014. *Comments on Duke Energy Indiana's 2013 Integrated Resource Plan*. Synapse Energy Economics and Schlissel Consulting for Mullet & Associates, Citizens Action Coalition of Indiana, Earthjustice, and Sierra Club.

Comings, T., K. Takahashi, G. Keith. 2013. *Employment Effects of Investing in Select Electricity Resources in Washington State.* Synapse Energy Economics for Sierra Club.

Stanton, E. A., T. Comings, K. Takahashi, P. Knight, T. Vitolo, E. Hausman. 2013. *Economic Impacts of the NRDC Carbon Standard.* Synapse Energy Economics for Natural Resources Defense Council (NRDC).

Ackerman, F., T. Comings, P. Luckow. 2013. *A Review of Consumer Benefits from a Corporate Average Fuel Economy (CAFE) Standards.* Synapse Energy Economics for Consumer Union.

Comings, T., P. Knight, E. Hausman. 2013. *Midwest Generation's Illinois Coal Plants: Too Expensive to Compete? (Report Update)* Synapse Energy Economics for Sierra Club.

Stanton, E. A., F. Ackerman, T. Comings, P. Knight, T. Vitolo, E. Hausman. 2013. *Will LNG Exports Benefit the United States Economy?* Synapse Energy Economics for Sierra Club.

Vitolo, T., G. Keith, B. Biewald, T. Comings, E. Hausman, P. Knight. 2013. *Meeting Load with a Resource Mix Beyond Business as Usual: A regional examination of the hourly system operations and reliability*

implications for the United States electric power system with coal phased out and high penetrations of efficiency and renewable generating resources. Synapse Energy Economics for Civil Society Institute.

Keith, G., S. Jackson, A. Napoleon, T. Comings, J. Ramey. 2012. *The Hidden Costs of Electricity: Comparing the Hidden Costs of Power Generation Fuels.* Synapse Energy Economics for Civil Society Institute.

Fagan, R., M. Chang, P. Knight, M. Schultz, T. Comings, E. Hausman, R. Wilson. 2012 *The Potential Rate Effects of Wind Energy and Transmission in the Midwest ISO Region.* Synapse Energy Economics for Energy Future Coalition.

Bower, S., S. Huntington, T. Comings, W. Poor. 2012. *Economic Impacts of Efficiency Spending in Vermont: Creating an Efficient Economy and Jobs for the Future*. Optimal Energy, Synapse Energy Economics, and Vermont Department of Public Service for American Council for an Energy-Efficient Economy (ACEEE).

Comings, T., E. Hausman. 2012. *Midwest Generation's Illinois Coal Plants: Too Expensive to Compete?* Synapse Energy Economics for Sierra Club.

Woolf, T., J. Kallay, E. Malone, T. Comings, M. Schultz, J. Conyers. 2012. *Commercial & Industrial Customer Perspectives on Massachusetts Energy Efficiency Programs*. Synapse Energy Economics for Massachusetts Energy Efficiency Advisory Council.

Hornby, R., T. Comings. 2012. *Comments on Draft 2012 Integrated Resource Plan for Connecticut (January 2012)*.Synapse Energy Economics for AARP.

Hornby, R., D. White, T. Vitolo, T. Comings, K. Takahashi. 2012. *Potential Impacts of a Renewable and Energy Efficiency Portfolio Standard in Kentucky*. Synapse Energy Economics for Mountain Association for Community Economic Development and the Kentucky Sustainable Energy Alliance.

Hausman, E., T. Comings, G. Keith. 2012. *Maximizing Benefits: Recommendations for Meeting Long-Term Demand for Standard Offer Service in Maryland*. Synapse Energy Economics for Sierra Club.

Keith, G., B. Biewald, E. Hausman, K. Takahashi, T. Vitolo, T. Comings, P. Knight. 2011. *Toward a Sustainable Future for the U.S. Power Sector: Beyond Business as Usual 2011*. Synapse Energy Economics for Civil Society Institute.

Hausman, E., T. Comings, K. Takahashi, R. Wilson, W. Steinhurst, N. Hughes, G. Keith. 2011. *Electricity Scenario Analysis for the Vermont Comprehensive Energy Plan 2011*. Synapse Energy Economics for the Vermont Department of Public Service.

Steinhurst, W., T. Comings. 2011. *Economic Impacts of Energy Efficiency Investments in Vermont*. Synapse Energy Economics for the Vermont Department of Public Service.

Petraglia, L., T. Comings, G. Weisbrod. 2010. *Economic Development Impacts of Energy Efficiency and Renewable Energy in Wisconsin*. Economic Development Research Group and PA Consulting Group for Wisconsin Department of Administration.

Economic Development Research Group. 2009. *Economic Assessment of Proposed Brockton Power Facility*. Prepared for Brockton Power Company.

Economic Development Research Group and KEMA NV. 2009. *Economic Benefits of Connecticut's Clean Energy Program*. Prepared for the Connecticut Clean Energy Fund.

Howland, J., D. Murrow, L. Petraglia, T. Comings. 2009. *Energy Efficiency: Engine of Economic Growth in Eastern Canada*. Economic Development Research Group and Environment Northeast.

Economic Development Research Group and KEMA NV. 2008. *New York Renewable Portfolio Standard: Economic Benefits Report*. Prepared for New York State Energy Research and Development (NYSERDA).

Economic Development Research Group and Navigant Consulting. 2008. *Economic Potential of an Advanced Biofuels Sector in Massachusetts*. Prepared for the Massachusetts Office of Energy and Environmental Affairs.

Economic Development Research Group. 2006. *Environmental Impacts of Massachusetts Turnpike and Central Artery/Tunnel Projects*. Prepared for the Massachusetts Turnpike Authority.

TESTIMONY

District of Columbia Public Service Commission (Formal Case No. 1119): Direct testimony evaluating the economic impact analysis of the proposed Exelon-Pepco merger. On behalf of the District of Columbia Government. November 3, 2014.

Kentucky Public Service Commission (Case No. 2013-00259): Direct and supplemental testimony regarding East Kentucky Power Cooperative's Application for Cooper Station Retrofit and Environmental Surcharge Cost Recovery. On behalf of Sonia McElroy and Sierra Club. November 27, 2013 and December 27, 2013.

Indiana Utility Regulatory Commission (Cause No. 44339): Direct testimony in the Matter of Indianapolis Power & Light Company's Application for a Certificate of Public Convenience and Necessity for the Construction of a Combined Cycle Gas Turbine Generation Facility. On behalf of Citizens Action Coalition of Indiana. August 22, 2013.

Resume dated July 2014

ATTACHMENT TFC-2

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