

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Ohio)	
Edison Company, The Cleveland Electric)	Case No. 14-1297-EL-SSO
Illuminating Company and The Toledo)	
Edison Company for Authority to Provide)	
a Standard Service Offer Pursuant to R.C.)	
§ 4928.143 in the Form of an Electric)	
Security Plan.)	

**THE NORTHWEST OHIO AGGREGATION COALLITION
AND INDIVIDUAL COMMUNITIES
TESTIMONY OF MARC A. VALLEN
NON-CONFIDENTIAL (ONLY VERSION)**

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1 **INTRODUCTION**

2 **PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

3 My name is Marc A. Vallen, and I am the principal of Vallen Energy Consulting, LLC,
4 which is located at 708 Ocean Palm Way, St. Augustine, FL 32080.

5 **PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND,**
6 **PROFESSIONAL EXPERIENCE, AND CURRENT OCCUPATION.**

7 I have a BA in economics and mathematics from Pomona College in Claremont,
8 California and an MBA concentrating in finance and accounting from Stanford
9 University in Stanford, California. I have been employed in the energy industry for my
10 entire career. My professional experience is unusual in that I have spent time working in
11 virtually every aspect of the energy business. During my 35-year career, I have worked
12 in the natural gas, refining and marketing, electricity, and conservation businesses, as
13 well as two occasions trading energy products. I have moved several times between
14 employment with large energy companies and working as a consultant providing
15 professional services to the power and natural gas industries.

16

17 I wound down my full-time consulting practice in 2011. I am currently semi-retired and
18 am spending most of my professional time as an Adjunct Professor teaching a class at
19 Flagler College, a four-year liberal arts college, entitled Energy Markets, Economics, and
20 Policies. I still occasionally undertake some consulting assignments for former clients or
21 former colleagues, but I am not actively marketing my consulting services.

22 **IS THE NORTHWEST OHIO AGGREGATION COALITION A FORMER**
23 **CLIENT AND, IF NOT, HOW DID THEY BECOME YOUR CLIENT?**

1 The Northwest Ohio Aggregation Coalition (“NOAC”) is not a former client. They were
2 referred to me by one of my mentors, Dr. Philip R. O’Connor, with whom I worked for
3 ten years at his firm Palmer Bellevue, which was later acquired as part of the consulting
4 arm of Coopers & Lybrand

5 **WHAT ARE YOUR AREAS OF EXPERTISE IN THE POWER INDUSTRY?**

6 The majority of my career has been spent in the power industry and I have several areas
7 of expertise that are relevant for this proceeding. First, I have spent many years
8 providing strategic consulting services to the electric utility industry focused on helping
9 firms manage the transition from regulation to competition. Part of this strategy work has
10 included a focus on regulatory strategy, both as managing the transitional phase to
11 competition as well as designing incentive-based regulation proposals. Second, I have
12 also spent a considerable amount of my career conducting dispatch analyses to prepare
13 market forecasts that I used with my clients and employers to acquire existing, or to build
14 new, power plants. And third, I have led numerous teams conducting analyses and due
15 diligence on existing and new power plants totaling more than 100,000 MW of power
16 plants, including natural gas, coal, hydro, nuclear, solar, wind and biomass facilities
17 ranging in size from 2 MW to 1,600 MW, and I have led or advised teams that have
18 successful acquired, divested, or developed generation plants totaling over \$10 billion in
19 value. As such, I am very experienced in the art and science of evaluating power plants
20 in a competitive market. A copy of my biography and qualifications are provided as
21 Attachment I and II, respectively, to my testimony.

22 **HAVE YOU TESTIFIED BEFORE THE PUBLIC UTILITY COMMISSION OF**
23 **OHIO BEFORE? IF NOT, WHERE HAVE YOU PREVIOUSLY TESTIFIED?**

1 I have not previously testified before the PUCO. My previous experience testifying was
2 early in my career when I was a cost of capital witness in a rate proceeding before the
3 California Public Utilities Commission. I also prepared cost of capital and other financial
4 exhibits for rate proceedings in front of the Nevada and Arizona commissions, as well as
5 in front of FERC.

6 **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7 The purpose of my testimony is to focus on two key points. First, while FirstEnergy has
8 proposed to stabilize customer rates via the ESP and RRS transaction, all the benefits
9 accrue to FirstEnergy via a regulated return on the assets, but all the risks of whether the
10 transaction is cost competitive, i.e., the market risk, falls to the customers. The PUCO
11 should reject this proposed transaction because this disparity between the benefits and the
12 risks is not in the customers' best interest. And second, the transaction cannot be found
13 prudent by the PUCO because the analysis by FirstEnergy is incomplete and, at times,
14 erroneous. There is no economic or financial basis upon which the PUCO can find this
15 transaction is in the customers' best interest.

16 **HOW WILL YOU SUPPORT YOUR KEY FINDINGS?**

17 To support my findings that the proposed ESP and Rider RRS transaction is not prudent
18 and poses undue risk to the customers, I will discuss the following six topics in my
19 testimony: 1) Critique that the FirstEnergy market forecast analysis lacked any scenario
20 or sensitivity analyses; 2) Critique that no economic analysis was provided that the Plants
21 and the OVEC interest are, and were, uneconomic; 3) Discussion that FirstEnergy was
22 not prudent in pursuing other potentially lower-cost and/or lower-risk options than the
23 proposed ESP and Rider RRS transaction; 4) Discussion of a strategic issue that argues

1 against the proposed ESP and RRS transaction; 5) Discussion of how if, in spite of the
2 forgoing, the proposed ESP and Rider RRS transaction rationale is deemed reasonable by
3 the PUCO, there were some serious flaws in how the transaction was valued; and 6)
4 Discussion that the proposed ESP and Rider RRS pose undue risk for FirstEnergy's
5 customers.

7 **1) LACK OF SCENARIO OR SENSITIVITY ANALYSES**

8 **WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

9 I will demonstrate that the market rate forecast and the economic analysis prepared by
10 FirstEnergy's witnesses is incomplete and not to industry standards. Specifically, the
11 lack of any sensitivity analyses whatsoever leaves the PUCO with no alternative but to
12 reject the proposed ESP and Rider RRS transaction.

13 **HAVE YOU REVIEWED THE TESTIMONY BY THE FIRSTENERGY**

14 **WITNESSES ABOUT THE UNDERLYING FORECASTS AND ASSUMPTIONS** 15 **USED IN ANALYZING AND PROPOSING THE ESP AND RIDER RRS?**

16 Yes, I have reviewed the market price forecast and supporting testimony and other
17 materials from discovery that Witness Rose prepared, and the testimony and material
18 from discovery about the proposed economic valuation and transaction prepared by
19 Witnesses Lisowski, Ruberto, as well as other FirstEnergy witnesses.

20 **WHAT OBSERVATIONS DO YOU HAVE ABOUT THE MARKET FORECAST** 21 **AND ECONOMIC ANALYSIS?**

22 First and foremost, there were absolutely no market forecasts performed at all using
23 different scenarios or sensitivities for any of the key variables, such as fuel cost

1 projections, new capacity additions, retirements, or growth in future electricity
2 consumption.

3 **WHY IS IT IMPORTANT TO CONDUCT SUCH SCENARIO OR SENSITIVITY**
4 **ANALYSES IN MARKET FORECASTS WHERE CUSTOMERS ARE ASKED**
5 **TO BEAR MARKET RISK?**

6 Such scenarios or sensitivity analyses (which I will refer to hereafter as collectively
7 sensitivity analyses) would enable FirstEnergy (and here I also mean FirstEnergy's
8 customers as well) to more accurately present and understand the risks and potential
9 different outcomes arising from the proposed transaction. As company Witness Moul
10 states quite nicely, "the market is in a state of transition, which brings uncertainty and
11 volatility" (Page 3, line 10). Such market uncertainty and volatility requires careful
12 assessment of all variables that could have a significant impact on the market price
13 forecast for electricity. Unfortunately, this was not done by FirstEnergy, which is
14 necessary to ensure that customers are not subject to undue risk from an imprudent
15 transaction since the customers are being asked to bear all the market price risks.

16 **WHY IS IT IMPORTANT TO ELICIT POTENTIAL DIFFERENT OUTCOMES?**

17 The market forecast prepared by Witness Rose is a single, "rifle shot" forecast with no
18 consideration provided for the uncertainties involved in preparing a 20-year forecast.
19 The only outcome we can be completely sure of is that the long-term market forecast will
20 not be accurate across each of the years. We know that there are so many economic
21 variables that influence hourly market prices for electricity that it is impossible to provide
22 a forecast of specific hourly prices with any degree of accuracy, let alone an hourly
23 forecast for the next twenty years. So in other words, such a single point market forecast

1 is an indication of one of very many possible outcomes, but not a definitive one, i.e., not
2 one that will actually occur.

3 **WHY THEN ARE MARKET FORECASTS USED IF THEY ARE NOT**
4 **PERFECTLY ACCURATE?**

5 To conduct an economic analysis of a proposed transaction, the financial analyst needs to
6 explore how the economics of that transaction would fare under different assumptions
7 about key variables and uncertainties, for instance future fuel costs or different numbers
8 of new power plants entering the market or different numbers of existing power plants
9 retiring. A “base case” forecast is only a starting point. At a minimum, each of the key
10 variables should be analyzed for upside and downside cases and have some level of
11 probabilities assigned. The sensitivity analysis will enable the key decision makers to
12 understand where the proposed transaction has the potential to be uneconomic and better
13 appreciate the probabilities associated with such outcomes.

14 **CAN YOU PROVIDE AN EXAMPLE?**

15 I will use as an example one of the key input variables used to prepare a market price
16 forecast, new capacity additions. The exact amount and type (i.e., fuel and technology)
17 of new capacity additions as well as the timing of the new capacity additions in the future
18 are unknown and have great uncertainty around them. The amount, type, and timing of
19 new capacity additions will depend on many economic factors, including future
20 electricity supply, future electricity demand, future costs associated with building various
21 types of new capacity, future tax policy, future renewable portfolio standards and
22 subsidies for renewables, and future interest rates and other macro-economic variables.
23 Since the future of new capacity additions is uncertain, the market forecast should have a

1 range of outcomes associated with different sensitivities around new capacity additions
2 that could impact the forecast for market prices. For instance, future market prices would
3 be influenced depending on whether the market is over-built with new capacity additions
4 or whether there is a need for new capacity to be built in the market.

5
6 The market forecast provided by Witness Rose assumes a perfectly balanced market each
7 year, i.e., the targeted reserve margin is achieved each year. However, in reality, the
8 power markets have experienced past episodes of boom and bust in building new
9 capacity and are highly likely to do so again. Thus, a more proper and prudent analysis
10 would examine what happens to market prices, and ultimately the economics of the
11 proposed ESP and Rider RRS transaction, should the market experience one of its boom
12 or bust cycles. Running multiple market forecasts with different assumptions about new
13 capacity additions would provide greater insight about how robust the economics of the
14 proposed transaction would be under less than perfect economic conditions for
15 FirstEnergy's customers. Such a series of sensitivity analyses would allow the PUCO to
16 make a fully informed decision about the proposed transaction. Since the sensitivity
17 analyses were not completed, the PUCO has no basis to determine whether the proposed
18 transaction is prudent and therefore is to the benefit of FirstEnergy's customers.

19 **WERE SENSITIVITY ANALYSES CONDUCTED FOR NEW CAPACITY**
20 **ADDITIONS OR ANY OF THE OTHER KEY VARIABLES YOU HAVE**
21 **IDENTIFIED?**

22 No, FirstEnergy witnesses stated that no sensitivity analyses were conducted either in the
23 market forecast used as an input to the proposed transaction or in the economic analysis

1 of the proposed transaction itself. See for instance Lisowski's response to SC Set 1 –
2 INT-59 in which he replied that: "No sensitivity analyses were run because the
3 proprietary unit dispatch modeling software utilized the capacity and energy price
4 forecasts by Witness Rose, which did not include sensitivity analysis" and Ruberto's
5 response to SC Set 2 – INT 64 that "no sensitivity analysis was done."

6 **YOU MENTIONED THAT THE KEY VARIABLES WHERE SENSITIVITY**
7 **ANALYSES SHOULD BE REQUIRED INCLUDE FUEL PRICE FORECASTS,**
8 **NEW CAPACITY ADDITIONS, RETIREMENTS, AND FUTURE**
9 **ELECTRICITY GROWTH. ARE THERE ANY ADDITIONAL SENSITIVITY**
10 **ANALYSES THAT YOU BELIEVE SHOULD ALSO BE REQUIRED?**

11 One other key area that calls out for different scenarios to be evaluated is the forecast of
12 capacity prices. Capacity prices are so uncertain that it is not appropriate to use a single
13 point forecast for capacity prices upon which to base a multi-billion dollar decision. The
14 various power markets around the U.S. do not have a standard approach in how to charge
15 for capacity. There are different ways in which capacity revenues are charged and, in
16 fact, some major ISOs do not even charge for capacity. There are numerous regulatory
17 hearings and some legal challenges associated with how capacity prices are addressed in
18 the competitive markets. Thus, it is unknown how capacity prices will be calculated for
19 the next 20 years within PJM (or any other ISO). The big question is whether capacity
20 revenues will they stay as they are today, or be significantly modified by regulatory or
21 legal proceedings. This high degree of uncertainty about capacity revenues should,
22 without question, have been thoroughly analyzed by Witness Rose and FirstEnergy

1 through sensitivity analyses to more fully understand the risks associated with the
2 proposed ESP and Rider RRS transaction.

3
4 Complicating the situation is that there are times when the power market does not exhibit
5 perfect economic rationality. Specifically, in a perfectly rational and economic world,
6 capacity prices would reflect the value of the carrying cost of the next unit to be built.
7 However, during times of an over-built market where capacity is significantly greater
8 than the reserve margin target, the value of capacity basically falls to zero. Conversely,
9 during times of capacity shortages, i.e., where the amount of capacity in the market falls
10 short of the reserve margin target, the value of capacity will soar far above its marginal
11 cost. Thus, a long-term forecast of capacity revenues is fraught with great uncertainty
12 and, given this uncertainty, it makes no sense to rely on a single point forecast for future
13 capacity prices. Instead, different market forecasts should be prepared using different
14 scenarios of how capacity prices may be economically set in the marketplace to evaluate
15 the importance of this input variable on the projected market price forecast.

16 **DID WITNESS ROSE EVER EMPLOY ANY SCENARIO OR SENSITIVITY**
17 **ANALYSIS IN THE MARKET FORECAST?**

18 Curiously, there was one variable to which Witness Rose discussed using different
19 scenarios, and that was for the price used for the CO2 allowance prices. However,
20 instead of running separate market forecasts across a range of possible outcomes for CO2
21 allowance prices, Witness Rose averaged the scenarios, albeit on a probability weighted
22 basis, and utilized a single point forecast for CO2 allowance prices.

1 **WHY IS USING A WEIGHTED AVERAGE PRICE NOT AS SATISFACTORY**
2 **AN APPROACH AS RUNNING DIFFERENT SCENARIOS OR SENSITIVITY**
3 **ANALYSES?**

4 By using only a single point forecast, we have no way of exploring whether the proposed
5 ESP and Rider RRS transaction becomes highly unfavorable if one or more of the
6 scenarios occurs. Such weight averaging of the input variable minimizes at best, and
7 obscures at worst, the potential impact of a wide range of possible outcomes in the
8 market forecast for electricity prices.

9 **WAS THE POTENTIAL FOR A SIGNIFICANT IMPACT ON THE MARKET**
10 **FORECAST OF ELECTRICITY PRICES ARISING FROM THE PROJECTION**
11 **OF CO2 ALLOWANCE PRICES EVER COMMUNICATED TO FIRSTENERGY**
12 **BY WITNESS ROSE?**

13 Not by anything that was submitted to and supported by Witness Rose's testimony.

14 **WAS THERE ANY ECONOMIC ANALYSIS PERFORMED BY ANY OF THE**
15 **FIRSTENERGY WITNESSES ABOUT THE IMPACT OF DIFFERENT CO2**
16 **ALLOWANCE PRICES ON THE VALUATION OF THE PROPOSED**
17 **TRANSACTION?**

18 None to my knowledge. FirstEnergy witnesses provided no information about the impact
19 on the proposed transaction arising from a delay in implementing cap and trade for
20 greenhouse gases or from any other potential outcomes for addressing climate change,
21 such as a carbon tax.

1 IN YOUR PROFESSIONAL OPINION, IS THE RELIANCE ON A SINGLE,
2 “RIFLE-SHOT” MARKET FORECAST WITHOUT ANY SENSITIVITY
3 ANALYSES A STANDARD APPROACH USED BY THE POWER INDUSTRY?

4 Absolutely not. Any major investment in the power industry always examines and
5 incorporates multiple upside and downside cases to better understand how the investment
6 will perform under different future outcomes. To rely only on a single, “rifle-shot”
7 analysis without conducting sensitivity analyses is imprudent. As a further illustration,
8 any major power plant that appears in front of the rating agencies to obtain a debt rating
9 is required to run extensive sensitivity analyses to satisfy the rating agencies that the
10 investment is robust and can withstand the economic uncertainties associated with a long-
11 term transaction of 15-20 years.

12
13 I led or advised on the evaluation of numerous power plants and transactions, both as a
14 consultant as well as an employee. Based on my professional experience and the number
15 of large dollar transactions I have reviewed, it is inconceivable to me that there was not
16 more detailed analysis for such a complex and costly transaction. A thorough and
17 comprehensive set of sensitivity analyses is, without question, required to highlight and
18 comprehend the potential risks and potential downsides before entering into such a
19 transaction as has been proposed by FirstEnergy for its ESP and Rider RRS. This was
20 not done by FirstEnergy or its outside consultant.

21 IS THE MARKET ANALYSIS ITSELF FLAWED?

22 The market price forecast is flawed due to its lack of detailed sensitivity analyses that
23 should have accompanied a market forecast that was to be used for evaluating an

1 economic transaction of this nature and size. Presenting only a “rifle-shot” market price
2 forecast is not accepted industry practice.

3 **IS RUNNING A SET OF SENSITIVITY ANALYSES TO COMPLEMENT A**
4 **BASE CASE MARKET PRICE FORECAST DIFFICULT?**

5 It is not difficult, but to undertake an industry acceptable set of sensitivity analyses is
6 time consuming and expensive; it certainly cannot be done with a \$30,000 off-the-shelf
7 market price forecast package. There are numerous key variables that have to be
8 analyzed to determine their potential for affecting the economic valuation of the proposed
9 transaction. However, a comprehensive sensitivity analysis is necessary and prudent for
10 a large dollar-valued transaction such as the proposed ESP and Rider RRS.

11 **DOES THIS ISSUE OF NOT EVALUATING THE KEY INPUT VARIABLES**
12 **MORE COMPLETELY EXTEND BEYOND THE MARKET FORECAST?**

13 Yes, my criticism about the lack of sensitivity analyses involves not only the market
14 forecast but also the economic model used by FirstEnergy. The economic model used to
15 evaluate the proposed ESP and Rider RRS transaction did not evaluate the different risks
16 and economic outcomes associated with the key input variables to the market price
17 forecast. At a minimum, it is important to know the economic impact of varying the key
18 input assumptions used in the market price forecast to see if they change the risk profile
19 for the proposed transaction or the underlying value of the transaction for FirstEnergy’s
20 customers.

21 **WAS ANY ECONOMIC SENSITIVITY ANALYSES CONDUCTED BY**
22 **FIRSTENERGY TO EVALUATE THE RISK AND VALUATION OF THE**
23 **PROPOSED ESP AND RIDER RRS?**

1 None.

2 **WHY IS THIS A CONCERN?**

3 As an experienced finance professional in the power industry, I can safely say that it
4 would be imprudent to make any decisions about the merits of the proposed transaction
5 without any economic sensitivity analyses to highlight the potential risks and possible
6 uneconomic outcomes. While the proposed transaction is beneficial for FirstEnergy, the
7 PUCO has no basis from the analysis presented by FirstEnergy to determine that the
8 transaction is in the best interests of the customers. There is no basis for understanding
9 the risks and potential economic exposure if one or more of the key input variables turn
10 out significantly different. For instance, if the future coal and natural gas prices differ
11 greatly from what is used as inputs in the “rifle-shot” market price forecast, there is no
12 indication of how that would impact the value of the proposed transaction to
13 FirstEnergy’s customers. The sensitivity analyses of the market price forecast should
14 have been passed through to and evaluated by the economic model used by FirstEnergy
15 to evaluate the proposed transaction. This was not done; no sensitivity analyses were
16 conducted anywhere within the filed testimony. This lack of comprehensive sensitivity
17 analysis is a critical flaw in FirstEnergy’s recommendation proposed ESP and Rider RRS
18 transaction, and the PUCO should not authorize it.

19 **DO YOU HAVE ANY OTHER CONCERNS ABOUT THE INTERFACE OF THE**
20 **MARKET PRICE FORECAST AND THE FIRSTENERGY ECONOMIC MODEL**
21 **USED FOR EVALUATING THE PROPOSED TRANSACTION?**

22 I identified one other potential concern. The ICF forecasting model used by witness Rose
23 is a standard industry dispatch model and provided hourly dispatch results (including

1 revenue and fuel consumed for each hour) for every power plant within PJM, including
2 those owned by FirstEnergy. However, in Witness Lisowski's testimony, he stated (page
3 5, lines 12-14) that the forecasting model used by FirstEnergy to report on the Plants and
4 the OVEC interest "is a proprietary monthly dispatch model that incorporates financial
5 and operational inputs to produce a projection of how the Plants would operate and the
6 amount of generation they would produce" [emphasis added]. While my overall
7 conclusion in my testimony is that the market price forecast itself is flawed, I have
8 another concern that FirstEnergy appears to create further analytical distortions by
9 changing modeling approaches, i.e. FirstEnergy ignored the more granular, hourly
10 dispatch data for the Plants and OVEC's interest from Witness Rose's model and
11 substituted data from their own model which was done at a more summarized level on a
12 monthly basis. The issue arises in making this substitution of data from one model to
13 another is that it is impossible to tell whether there are distortions created in the financial
14 modeling results for the Plants and OVEC interests. There is an implicit assumption
15 made by FirstEnergy that, by utilizing Witness Rose's market price forecast averaged for
16 each month, there is an infinite amount of power that can be generated at that price each
17 hour during the month. If, as FirstEnergy maintains, the Plants and the OVEC interest
18 are marginally profitable, there may be some significant time during the month where
19 these plants are on the margin, i.e., setting marginal prices for PJM, which could mean
20 that the Plants and the OVEC interest may not operate at all times during the month.
21 However, we are not able to gauge the accurate dispatch and economics of the Plants and
22 the OVEC interest because FirstEnergy switched to an inconsistent model to report out
23 the results for these assets. There is no benefit to switch over and report FirstEnergy's

power plants under one model while another model analyzes all plants in PJM including those owned by FirstEnergy. Doing so creates the potential for inconsistent and misleading results.

2) LACK OF ANALYSIS THAT THE PLANTS AND THE OVEC INTEREST
ARE UNECONOMIC

WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

I will show that the FirstEnergy testimony and exhibits do not support its assertion that the Plants and the OVEC interest are uneconomic.

WHAT IS THE RATIONALE FIRSTENERGY OFFERS FOR INCLUDING THE PLANTS AND THE OVEC INTEREST IN THE PROPOSED ESP AND RIDER RRS?

In Witness Moul's testimony, he stated that the "economic viability of the Plants is in doubt" (Page 3, line 17) and that "markets have not, and are not, providing sufficient revenues to ensure continued operation of the Plants" (Page 4, lines 5-6).

IS THIS CLAIM OF ECONOMIC VIABILITY SUPPORTED BY FIRSTENERGY?

FirstEnergy's witnesses never offer up any testimony or exhibits that demonstrate that the Plants (and the OVEC interest) are currently uneconomic and that their economic future are in jeopardy. The FirstEnergy witnesses provide a high level summary analysis of the costs and revenues for the Plants and the OVEC interest, but there is no detail provided about why the assets are uneconomic and what costs from these assets are not being economically covered. We do not know whether the statement that the plants are not

1 economically viable means that the assets cover their fixed costs but not their return of
2 and/or return on capital, or whether being uneconomic means something else. Nor do we
3 know whether FirstEnergy is seeking to obtain a regulated return on a set of assets that
4 are already profitable in a competitive market, although at profitability level lower than
5 FirstEnergy would prefer.

6 **WHY IS THIS AN IMPORTANT ISSUE FOR THE PUCO?**

7 Without such supporting testimony and exhibits showing that the Plants and the OVEC
8 interest are truly uneconomic and are clearly in danger of being shut down, this is an
9 assertion, not a proved economic fact supported by testimony, and as such it must not be
10 accepted by PUCO. In fact, the lack of support about the economic viability of the Plants
11 and the OVEC interest calls into question the entire rationale about the proposed ESP and
12 Rider RRS.

13 **WHAT ELSE SHOULD THE PUCO CONSIDER REGARDING THE**
14 **ECONOMIC VIABILITY OF THESE GENERATING ASSETS?**

15 There is no discussion at all regarding the likelihood or probability that what FirstEnergy
16 views as short-term uneconomic operations will turn around and become a long-term
17 gain. Referring to my earlier testimony, all we have is a single-point market price
18 forecast and FirstEnergy's unsupported claim that "FES may not be able to continue
19 incurring losses by continuing to run the Plants in the near term in order to incur the long-
20 term benefits associated with the Plants" (Moul, Page 5, lines 1-3). If FirstEnergy is
21 unable to demonstrate the these assets face losses in the near-term and is unable to
22 discuss the probability, i.e., the risk, associated with turning a short-term loss into a long-

1 term gain, then in my opinion the risks associated with these assets should not be pushed
2 off onto the customers.

3 **WHAT ABOUT THE TESTIMONY OF WITNESS MURLEY THAT THERE**
4 **ARE STRONG ECONOMIC BENEFITS FROM KEEPING THE PLANTS**
5 **OPEN?**

6 Witness Murley enumerated the economic benefits of keeping the Plants open by tracing
7 how the economic benefits trickle through the communities where the Plants are located.
8 However, her analysis excluded two important points. First, there is no discussion of
9 whether these plants are in danger of retiring; that is only an assertion by FirstEnergy, not
10 anything that has been proved by supporting testimony and exhibits. Thus, the benefits
11 Witness Murley calculates already exist today and, if the Plants are not going to retire,
12 will continue through the next several years.

13

14 Second, and more importantly, Witness Murley did not analyze, or perhaps was not asked
15 to analyze, the adverse economic impact from having higher electricity prices. The
16 subsidy that FirstEnergy is requesting in the proposed ESP and Rider RRS will
17 unquestionably cause electricity prices for its customers to increase in the short-term
18 (with an unknown potential, but not the certainty, of higher or lower prices later).

19 **ARE THERE OTHER NEGATIVE IMPACTS FROM KEEPING THE PLANTS**
20 **ON-LINE UNECONOMICALLY THAT WERE IGNORED BY WITNESS**
21 **MURLEY?**

22 Yes. By continuing to operate the Plants when they are uneconomic, there is economic
23 damage that will be incurred from the resulting sub-optimal dispatch of power plants in

1 PJM, which will lead to further higher electricity costs for Ohio residents. Witness
2 Murley's analysis did not incorporate the negative impact on FirstEnergy's customers
3 from paying these higher electricity rates, nor did she incorporate the economic gain from
4 increased employment and the multiplier effects thereof arising from the new power
5 plants that would replace the ones that FirstEnergy asserts it may retire. The economic
6 analysis of the Plants cannot be done in a vacuum; a comprehensive analysis is required
7 to fully understand any economic benefit or harm from retiring the plants, which was not
8 done. In my opinion (without running any analysis), from an economic perspective, the
9 subsequent employment at other power plants plus the multiplier effect of that
10 employment combined with eliminating any increased electricity prices arising from the
11 Plants' retirement would likely more than offset the losses Witness Murley calculated.

12 **BUT YOU DO NOT KNOW IF YOUR OPINION ABOUT THE ECONOMIC**
13 **BENEFITS OF THE EMPLOYMENT AT THE OTHER PLANTS AND THE**
14 **LOWER ELECTRIC PRICES IS CORRECT, DO YOU?**

15 No, as I said, it my opinion based on years of experience in financial modeling. But one
16 point is certain: Witness Murley also does not know the economic benefits obtained from
17 retiring the plants, since it was not incorporated into her analysis, whether through
18 oversight or through a truncated consulting assignment. Thus, the PUCO does not have
19 sufficient basis to include any of Witness Murley's conclusions in their deliberations
20 about the merits of the proposed ESP and Rider RRS.

21
22 **3) LACK OF PRUDENCY IN NOT PURSUING OTHER POTENTIALLY**
23 **LOWER-COST AND/OR LOWER-RISK OPTIONS**

1 **WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

2 In this section of my testimony, I will show that FirstEnergy has not conducted sufficient
3 economic analysis or reviewed sufficient other alternatives to conclude that the proposed
4 transaction achieves fuel diversity and price stability at the lowest cost to customers.

5 **HAS FIRSTENERGY CONDUCTED SUFFICIENT ANALYSIS OF THE**
6 **PROPOSED ESP AND RIDER RRS TRANSACTION TO CONCLUDE THAT IT**
7 **IS PRUDENT AND IN ITS CUSTOMERS' BEST INTEREST?**

8 FirstEnergy was not sufficiently thorough in its analysis to conclude that the proposed
9 ESP and Rider RRS transaction is in the best interests of its customers. To determine that
10 such a transaction is prudent, FirstEnergy should have explored all alternatives available
11 to customers to obtain the lowest risk and/or least cost option available, not just the one
12 alternative presented. FirstEnergy offers no testimony or exhibits to support that the
13 proposed transaction is in the best interests of its customers since it was not compared to
14 any other alternatives. At a minimum, I would have expected FirstEnergy to seek bids
15 from the market for a long-term power purchase agreement from a different set of coal
16 and nuclear power plants within Ohio (or reasonably nearby) than those owned by
17 FirstEnergy. In this manner, FirstEnergy would have been in a position to conclude
18 whether the same strategic objectives could be achieved as the ESP and RRS Rider but
19 perhaps at a lower cost. If FirstEnergy has not negotiated arms-length power purchase
20 agreements with other power plants in the region, then FirstEnergy is not in a position to
21 conclude that the ESP and RRS Rider transaction is prudent, i.e., that it is the least cost
22 option for FirstEnergy's retail customers.

1 **ARE THERE OTHER OPTIONS AVAILABLE TO FIRSTENERGY'S**
2 **CUSTOMERS THAT SHOULD HAVE BEEN EVALUATED BEFORE**
3 **FIRSTENERGY COULD PRUDENTLY CONCLUDE THAT THE PROPOSED**
4 **TRANSACTION IS THE LEAST COST, ADDS MORE STABILITY, AND/OR IS**
5 **THE LOWEST RISK?**

6 Yes, there are two other options that, in my opinion, should be explored before the PUCO
7 has a basis for determining the proposed ESP and Rider RRS transaction is prudent and
8 in the customers' best interest. First, I would have explored a must-run contract with
9 PJM to enable the Plants and the OVEC interest to continue to operate without incurring
10 a loss during the next few years when FirstEnergy believes that the economics are
11 unfavorable. Part of PJM's role as the independent system operator is to evaluate which
12 plants are critical for the secure and reliability operation of the power grid. In certain
13 cases, PJM can offer a "must-run" contract for power plants that are in jeopardy of
14 shutting down but that PJM deems must be left operational for reliability reasons. If
15 FirstEnergy believes that Sammis and Davis-Besse must be operated to stabilize the grid
16 and minimize capital transmission projects, then FirstEnergy should have made this case
17 to PJM and negotiated must-run agreements. There is no testimony or exhibits that
18 discuss FirstEnergy approaching PJM to negotiate a must-run agreement. Such an effort
19 is required before there is any basis to claim that the proposed ESP and Rider RRS
20 transaction is lower cost for the customers than entering into must-run agreements. If the
21 Plants are truly that critical to the grid and PJM agrees with that assessment, then
22 alternatives do exist besides the one transaction proposed by FirstEnergy.

1 **ARE THERE ADDITIONAL OPTIONS THAT SHOULD HAVE BEEN**
2 **EXPLORED BY FIRSTENERGY?**

3 Yes, there is one other option that merits evaluation before FirstEnergy can definitively
4 conclude that the proposed ESP and Rider RRS transaction is prudent, i.e., it offers lower
5 prices, greater stability, and/or lower risk. One of the key arguments that FirstEnergy
6 provides in support of the proposed transaction is the unreliability of natural gas-fired
7 power plants during cold spells due to the lack of non-firm natural gas transmission
8 which imperils their fuel supply at critical times. In my opinion, another option with two
9 variations that might have great potential, but that was not discussed at all by
10 FirstEnergy, is to enter into agreements to have the natural gas-fueled power plants obtain
11 firm fuel supplies. One variation on this theme is to seek bids from the marketplace from
12 natural gas-fueled power plants that have firm fuel supply arrangements. Another
13 variation on this option is to have FirstEnergy on behalf of its customers enter into firm
14 natural gas transmission contracts and make these firm fuel supply contracts available to
15 the natural-gas fired power plants on the coldest days. It would be interesting to see
16 whether paying for firm transmission (on either existing or new natural gas pipelines)
17 under either of these two variations would result in an option available to FirstEnergy's
18 customers that is less expensive and equally reliable as the proposed ESP and Rider RRS
19 transaction.

20 **DO YOU BELIEVE THAT THE PROPOSED TRANSACTION HAS BEEN**
21 **SUFFICIENTLY ANALYZED SO THAT IT CAN BE DEEMED PRUDENT BY**
22 **THE PUCO?**

1 The failure of FirstEnergy to evaluate any of the three alternative options I have
2 identified that would be available to address volatile prices and an uncertain market
3 means that, in my opinion, the proposed transaction has not been sufficiently analyzed to
4 determine that it is prudent. To summarize, the four options that should have been
5 evaluated by FirstEnergy before proposing the ESP and Rider RRS consist of: 1)
6 Purchase power agreement with plants other than those owned by FirstEnergy; 2) Must-
7 run contract with PJM; 3) One of two variations to obtain firm natural gas transmission
8 supply; and 4) Financial swap to pass the risk of operating the plants for the next few
9 years at a loss to a third party for a fee.

10 **DO YOU HAVE ADDITIONAL CONCERNS ABOUT THE UNDERLYING**
11 **ECONOMIC ANALYSIS OF THE PROPOSED ESP AND RIDER RRS**
12 **ANALYSIS THAT AFFECTS THE PUCO'S ABILITY TO DETERMINE**
13 **PRUDENCY?**

14 Yes, I have two additional concerns that I would like to point out. First, whenever a
15 power plant or set of power plants is evaluated, it is benchmarked against a peer group to
16 determine how it compares for various operating costs. FirstEnergy conducted only a
17 superficial benchmarking, one that would not at all be acceptable if a third party were
18 evaluating these facilities for an acquisition. For starters, a much larger peer group
19 should have been selected. Out of all the coal-fired power plants and nuclear plants in
20 the country, FirstEnergy only used 5 and 8 plants, respectively, for comparison purposes.
21 This is too small a group; in my experience, a transaction of this size would use at least
22 15-20 plants to compare each against, which would provide more context and is more
23 typical of a standard industry assessment of plant operations. Secondly, FirstEnergy

1 benchmarked its Plants against the small peer group only in total operating expense. A
2 standard benchmarking effort examines each of the major components of operating
3 expenses for comparison purposes. And finally, the FirstEnergy plants should have been
4 evaluated so that each of the operating expenses achieved the top quartile of the peer
5 group instead of settling for “middle of the pack.” Without an arms-length evaluation of
6 the Plants, there is no assurance for FirstEnergy’s customers that the proposed ESP and
7 Rider RRS transaction is the least-cost option available. FirstEnergy hired an outside
8 consulting firm to prepare an independent assessment of the dispatch analysis and market
9 prices. It should have also hired an outside engineering consulting firm to conduct an
10 independent and more thorough benchmarking effort and used the results of that
11 benchmarking study to negotiate a more favorable contract for operating expenses with
12 the affiliate that owns the Plants.

13 **BESIDES BENCHMARKING, WHAT IS THE SECOND ADDITIONAL**
14 **CONCERN YOU HAVE ABOUT THE UNDERLYING ECONOMIC ANALYSIS**
15 **OF THE PROPOSED ESP AND RIDER RRS ANALYSIS THAT AFFECTS THE**
16 **PUCO’S ABILITY TO DETERMINE PRUDENCY?**

17 Witness Moul stated in his testimony that “resource diversity helps mitigate price
18 volatility” (Page 8, line 6). However, what is missing is any economic analysis that
19 enabled FirstEnergy to determine the acceptable level of price volatility, or price stability,
20 and the number of different fuel sources, i.e., amount of diversity, needed to achieve that
21 acceptable level of price stability for its Ohio customers. Clearly there is fuel diversity
22 within Ohio and within PJM. However, there was no testimony or exhibits submitted to
23 support that there is an acceptable level of price stability for FirstEnergy’s Ohio

1 customers, nor were any submitted to support the ideal amount of fuel diversity within
2 Ohio to achieve that level of price stability. For instance, is the ideal fuel mix two energy
3 sources in a 90/10 ratio? A mix of three fuels in equal portions? Or something else
4 altogether? While I am sympathetic towards the concept of fuel diversity, such a
5 sentiment alone is not sufficient to determine that the proposed ESP and Rider RRS
6 transaction is inherently prudent from a price stability point of view.

7 **ANY OTHER CONCERNS RELATED TO THE LACK OF ANALYSIS FOR**
8 **FUEL DIVERSITY?**

9 Yes, I also have a related concern about the size in megawatts of the proposed ESP and
10 Rider RRS transaction. Per Witness Moul's testimony, the ESP and Rider RRS proposal
11 consists of approximately 3,250 MW of coal and nuclear generation to provide a secure,
12 reliable, and non-volatile source of power for FirstEnergy's customers (Page 8, line 12).
13 But once again, there was no analysis conducted by FirstEnergy to determine that 3,250
14 MW was the right level to achieve the goals of secure, reliable and minimal volatility.
15 How does FirstEnergy know that the proper amount needed to achieve these objectives is
16 not 1,000 MW instead of 3,250 MW, or 15,000 MW instead of 3,250 MW? In fact,
17 FirstEnergy has no basis for knowing whether the 3,250 MW size of the proposed
18 transaction will achieve any of these objectives of secure, reliable, and minimal volatility.
19 So the lack of analysis supporting FirstEnergy's conclusions that the proposed transaction
20 will achieve fuel diversity and provide a secure, reliable and non-volatile source of power
21 from 3,250 MW fails to provide sufficient basis for concluding that the transaction is
22 prudent.

23

1 **4) STRATEGIC CONSIDERATION**

2 **WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

3 I have a strategic concern that I want to highlight for the PUCO regarding the proposed
4 ESP and Rider RRS transaction. This concern strongly argues against approving the
5 proposed transaction.

6 **WHAT IS THE STRATEGIC CONSIDERATION THAT ARGUES AGAINST**
7 **APPROVING THE PROPOSED ESP AND RIDER RRS TRANSACTION?**

8 PUCO obviously recognizes and understands that competitive markets work differently
9 than regulated markets. Inherent in competitive markets is greater price volatility. While
10 some successful retail providers may offer fixed prices to customers, although at a cost
11 since that stability insurance increases the risk and costs for the retail provider, the long-
12 term nature of competitive markets is one of greater price volatility than regulated
13 markets.

14 **WHY DO COMPETITIVE MARKETS HAVE GREATER VOLATILITY THAN**
15 **REGULATED MARKETS?**

16 Under past regulation of the fuel and power markets, the Ohio utilities all had long-term
17 fuel contracts and sold electricity under regulated tariffs to their customers. The prices of
18 the fuel markets did not change daily reflecting that day's economic crisis because the
19 fuel prices were all locked in under long-term contracts. Thus, electric customers were
20 insulated from daily fuel price changes not only due to the long-term nature of the fuel
21 contracts but also from the regulated electric tariff that changed infrequently. But once
22 the fuel markets deregulated (an event driven by market forces completely outside the
23 control of Ohio) and once Ohio determined it wanted to allow electric retail competition

1 (a decision made solely by Ohio), the long-term fuel contracts ended as well as the
2 regulated electric tariffs. When that deregulation point is reached, there is greater
3 volatility in electricity prices because now the fuel markets react to every daily economic
4 dislocation, which then gets immediately passed onto the electric customers through
5 changes in wholesale and retail electricity prices. Electric customers are no longer
6 insulated from the perturbations of the fuel markets, plus they also now are exposed to
7 any economic forces affecting the short-term electric markets.

8 **WHY IS THIS CHANGE FROM REGULATED, MORE STABLE PRICING TO**
9 **COMPETITIVE, MORE VOLATILE MARKETS IMPORTANT?**

10 The increased price volatility both up and down is now to be expected, and trying to
11 regulate it away is not a regulatory objective that is possible. Any attempt to create price
12 stability for retail customers will ultimately fail. Having made the commitment to
13 become deregulated, do not stop in the middle or reverse course and end up achieving
14 partial deregulation, as that is the worst possible outcome. Trying to create a market
15 where a partially deregulated utility must compete against unregulated companies is not a
16 solution; it is an unstable disaster in the making. In a partially deregulated market, the
17 PUCO will end up spending its time trying to “tweak” the rules of the game and subsidies
18 required to protect the semi-regulated incumbent against the onslaught of the competitors.
19 Since the State of Ohio previously decided to move to retail competition, and the
20 stranded costs were identified and addressed for the incumbent utility, at this point the
21 PUCO should not reverse this journey to competitive retail markets by trying to establish
22 a subsidy to FirstEnergy (which, by definition, creates a partially deregulated market).

1 **HOW DOES THIS INSIGHT ABOUT PRICE VOLATILITY AND**
2 **COMPETITIVE MARKETS APPLY TO FIRSTENERGY’S PROPOSED ESP**
3 **AND RIDER RRS?**

4 The FirstEnergy affiliate FES is experiencing price volatility, which worked fine when
5 prices moved in their favor. But now that prices are moving against them, FirstEnergy is
6 proposing a transaction that shifts all price risk to the customers. This is exactly
7 equivalent to the proverbial “heads I win; tails you lose” proposition.

8
9 In a nutshell, FirstEnergy would like the PUCO to take a step backwards and create a
10 new stranded cost. Rather than advance to a more competitive marketplace, FirstEnergy
11 would like to return some assets to traditional, cost-plus, rate of return regulation that
12 passes all the price risk along to the customers. This approach would involve exactly
13 what I just warned about: Such a transaction tries to build a bulwark of partial regulation
14 that will only temporarily slow the move to competitive markets before being eroded by
15 the unrelenting tide and time of the (unregulated) competition. This proposal from
16 FirstEnergy does not advance competitive markets; it only hinders them from functioning
17 well.

18
19 **5) SERIOUS FLAWS IN HOW THE TRANSACTION WAS VALUED**
20 **BESIDES THE ISSUES YOU HAVE RAISED PREVIOUSLY ABOUT**
21 **PRUDENCY AND RISK TO THE CUSTOMERS, HAVE YOU IDENTIFIED ANY**
22 **ADDITIONAL ISSUES RELATED TO FIRSTENERGY’S ECONOMIC**
23 **ANALYSIS OF ITS PROPOSED ESP AND RIDER RRS?**

1 As is clear my testimony above, the proposed ESP and Rider RRS transaction is not
2 prudent and increases risk for FirstEnergy's customers and should be rejected by the
3 PUCO. However, I also want to further point out that the flawed analysis does not end
4 there. Should the PUCO consider approving the proposed ESP and Rider RRS in spite of
5 my earlier testimony about its lack of merit and prudence, I would like to demonstrate
6 there are three serious flaws involved in how the transaction was analyzed by
7 FirstEnergy, which calls into question its accuracy.

8 **COULD YOU PLEASE ELABORATE ON THESE FLAWS IN FIRSTENERGY'S**
9 **ANALYSIS?**

10 The first flaw in FirstEnergy's analysis is that the calculation of the net present value
11 benefit to the customers was done incorrectly. In a competitive market, an existing
12 power plant's economic objective is to maximize its operating profit. In a competitive
13 market, the capital cost incurred to build the power plant is a sunk cost. Each hour the
14 power plant is successfully dispatched, it is seeking to earn sufficient revenues to cover
15 its variable operating costs and make a contribution each hour towards its fixed
16 operational costs. But recovery of capital investment and return on capital are not
17 included in the daily calculus of operating the power plant; the focus is simply to
18 maximize operating profit.

19 **WHY IS THIS DISTINCTION IMPORTANT?**

20 If an investor were buying an existing power plant in a competitive market, the investor
21 would calculate the internal rate of return on the proposed purchase price based on the
22 forecast of the future cash flows from the investment. Please note that such an analysis
23 would exclude from the forecast of the cash flows any line item for depreciation, i.e.,

1 recovery of capital invested, and it would also exclude any line item showing a return on
2 capital invested. The analysis would focus only on net cash flow from operations
3 because, once purchased, the cost of purchasing the power plants is a sunk cost and no
4 longer relevant in a competitive market.

5 **BUT WHAT ABOUT FIRSTENERGY'S PREVIOUS INVESTMENT IN THE**
6 **PLANTS AND THE OVEC INTEREST?**

7 Since Ohio has previously provided for the recovery of stranded costs for the electric
8 utilities in the transition to competition and since FirstEnergy has transitioned these
9 plants and the OVEC interest into the competitive market, any evaluation of the Plants
10 and the OVEC interest should exclude consideration of depreciation and return on
11 capital. The PUCO and FirstEnergy's customers are interested in the level of the
12 operational cash flows going forward in a competitive market, not a regulated return on
13 FirstEnergy's historical investment. The capital cost of the Plants and the OVEC
14 investment are no longer relevant since the recovery of any stranded costs has previously
15 occurred. Thus, going forward, the risk of investment in the Plants and the OVEC
16 interest in a competitive market are FirstEnergy's responsibility, not its customers'; any
17 evaluation of these plants should exclude consideration of depreciation and return on
18 capital.

19 **WHAT OTHER FLAWS DID YOU NOTE IN FIRSTENERGY'S ANALYSIS?**

20 Secondly, in Witness Ruberto's prepared testimony and exhibits, he calculated the net
21 present value of the benefit to the customers from the proposed ESP and Rider RRS and
22 he used FirstEnergy's weighted cost of capital of 7.85%. Since this proposed transaction
23 is to benefit the customers, not FirstEnergy, the proper cost of capital to use would be the

1 customer's discount rate, i.e., the rate in which the customers would value the higher cost
2 in the early years in exchange for the opportunity to earn a credit back in the later years.
3 However, this was not done and FirstEnergy used its own cost of capital that is much
4 lower.

5 **WHAT WOULD BE THE PROPER COST OF CAPITAL TO USE, AND WHAT**
6 **WOULD THE RESULT OF THE DISCOUNT ANALYSIS BE?**

7 The proper approach would be to estimate the customer discount rates by class of
8 customer, i.e., for industrial, commercial business, and residential customers, that these
9 customers use for making energy-related decisions. There have been several academic
10 studies in the past looking at demand-side management programs that estimate the
11 customers' discount rates, which have shown that the customers' discount rates for
12 making energy investments for all three classes of customers are at least 15% and perhaps
13 as high as 20% or more. I also know from my personal experience working with
14 commercial and industrial customers in evaluating energy-related investments, both
15 demand and supply-side investments, that the typical discount rate is in excess of 20%. If
16 the proposed ESP and Rider RRS were discounted not at FirstEnergy's cost of capital but
17 at a cost of capital equal to its customers' discount rate, the net present value of the
18 proposed transaction approaches \$135 million, not the approximately \$800 million
19 calculated by FirstEnergy. This resulting lower net present value means that any
20 variation from the flawed, "rifle-shot" market price analysis has very little room for error
21 before costing customers significant amounts.

22 **IS THE RESULTING \$135 MILLION NET PRESENT VALUE FAVORABLE TO**
23 **FIRSTENERGY'S CUSTOMERS?**

1 From my testimony above, I found that the net present value of the proposed transaction
2 calculated by FirstEnergy of about \$800 million was not in the best interests of
3 FirstEnergy's customers: flawed conclusions without the sensitivity analysis and too high
4 of a risk for customers given the uncertainties of competitive markets. After correcting
5 for the discount rate, a net present value for the proposed transaction of about \$135
6 million is even a worse deal for the customers.

7 **WHAT OTHER FLAW HAVE YOU IDENTIFIED IN FIRSTENERGY'S**
8 **ECONOMIC ANALYSIS OF THE PROPOSED ESP AND RIDER RRS?**

9 Third, there is another serious flaw in how FirstEnergy calculates the cost of capital it
10 used. In Witness Roberto's testimony, he stated that the "parties would use a capital
11 structure of 50% equity and 50% debt" (Page 4, lines 18-19). However, since the
12 proposed transaction involves what is essentially a purchase power agreement between
13 the Plants and FirstEnergy and its customers, any third-party investor would seek project
14 financing for the transaction, resulting in a debt ratio significantly higher, in the 80-90%
15 range instead of 50%.

16 **WHAT WOULD BE THE IMPACT OF A SIGNIFICANTLY HIGHER DEBT**
17 **RATIO ON A POWER PLANT OWNER'S WEIGHTED COST OF CAPITAL?**

18 The standard industry approach to financing using project debt at a higher ratio (in the
19 80% to 90% range) would result in a significantly lower weighted cost of capital because
20 the cost of debt is so much less expensive than the cost of equity. If the industry standard
21 approach to financing power plants were used, this lower weighted cost of capital would,
22 in turn, significantly lower the amount of revenue needed to be collected from
23 FirstEnergy's customers each year.

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6) THE PROPOSED ESP AND RIDER RRS POSE UNDUE RISK FOR
FIRSTENERGY’S CUSTOMERS

DOES THE PROPOSED ESP AND RIDER RRS IMPOSE UNDUE RISK TO
FIRSTENERGY’S CUSTOMERS?

Witness Ruberto testified that the “EDU Team also worked to ensure that the terms of the transaction would not impose undue risk on customers.” (Page 10, lines 1-2). This is a conclusion with which I strongly disagree. In my professional opinion, FirstEnergy’s customers unquestionably have undue risk associated with the proposed transaction and, on that basis alone, the transaction should be rejected by the PUCO.

WHY DO YOU BELIEVE THAT THE PROPOSED TRANSACTION WOULD
IMPOSE UNDUE RISK ON THE CUSTOMERS?

I believe that the customers are at extreme risk from this transaction for the following reasons: First, the transaction imposes costs on the customers in the early years for future benefits that are highly uncertain. Second, the future cash flows have a high degree of risk, since they depend on a market forecast that has great uncertainties. But no sensitivity analyses were conducted by FirstEnergy to evaluate the proposed transaction’s riskiness to the customers. Third, if the cash flows are evaluated using the customers’ discount rate instead of FirstEnergy’s discount rate, there is very little benefit to the customers. Fourth, no outside engineering consulting assistance was obtained to evaluate the operating costs of the Plants and the benchmarking effort conducted by FirstEnergy was sub-par. Fifth, no effort was made to negotiate an agreement that would minimize

1 the operating costs of the Plants compared to a peer group, something that would be
2 standard in any third-party transaction.

3 **WHAT IS YOUR CONCLUSION ABOUT THE RISK TO THE CUSTOMERS**
4 **FROM THE PROPOSED TRANSACTION?**

5 Based on my experience working with utilities transitioning from regulation to
6 competitive markets, I strongly believe that: a) there is excess risk for the customers
7 arising from the proposed transaction; and b) FirstEnergy's conclusion that there is no
8 undue risk for the customers should be rejected. The purpose of an electric stability plan
9 is just that...stability for the customers. The exact opposite would occur from
10 FirstEnergy's proposed transaction: FirstEnergy obtains stability (now that market prices
11 are moving against its affiliate) while passing all the volatility along to its customers.
12 This is the proverbial "heads I win, tails you lose" proposition. The bottom line is that
13 customers are harmed until they can move to a truly competitive market.

14

15 **CONCLUSION**

16 **DOES THIS CONCLUDE YOUR TESTIMONY?**

17 Yes it does. I reserve the right to supplement my testimony.



ATTACHMENT I – BIOGRAPHY FOR MARC A. VALLEN

Marc A. Vallen is a principal with Vallen Energy Consulting, LLC (“VEC”), a boutique consulting firm specializing in strategic planning, valuation, financial modeling, and power plant development for clients in the power industry. Mr. Vallen has over thirty years’ experience in the energy industry, the last twenty-five in the natural gas and power sectors. He has been an employee with several different utilities as well as spending many years providing consulting and advisory services to utilities and independent power companies. Mr. Vallen has led development teams for both renewable and fossil-fueled power plants. He has also worked for a major oil company, started and led two energy conservation companies, and been an active trader of both petroleum products and financial transmission rights.

Mr. Vallen’s areas of expertise include:

- Analyzing the economics and feasibility of energy investments;
- Valuing energy assets in competitive markets;
- Building financial and business models;
- Analyzing the economics of distributed generation from both the customer and utility point of view;
- Developing air emissions compliance strategies;
- Strategic planning for senior management, including identifying and responding to emerging industry trends in the energy industry; and
- Developing and implementing business plans and providing project management.

Mr. Vallen has extensive experience in all aspects of generation, having led valuation, acquisition, development, repowering and daily dispatch optimization on more than 100,000 MW of power plants, including natural gas, coal, hydro, nuclear, solar, wind and biomass facilities. Within a generation fleet, Mr. Vallen advises on acquisitions, development, re-powering, capital budgeting decisions, and improvements in day-to-day plant operations. He also builds leading-edge financial and dispatch models to make daily dispatch decisions, optimizes plant performance, negotiates fuel contracts, and negotiates long-term purchased power agreements. He also has facilitated numerous strategic planning sessions for both employers and clients. His consulting practice has focused on business strategies to assist electric utilities in their transition to direct retail competition, as well as marketing strategies and implementation plans to assist electric and gas utilities in offering new, value-added products and services.

Mr. Vallen is also well versed in the economics of distributed generation (“DG”) and energy efficiency, having been one of the pioneers in the industry in first offering these services. He has developed a number of DG and energy efficiency programs for utilities as well as co-founded and managed two energy service companies offering these products to end-users.

Mr. Vallen holds a MBA degree in finance and accounting from the Stanford Graduate School of Business in Stanford, California. He also has a BA degree in economics and mathematics from Pomona College in Claremont, California. He is currently an adjunct professor at Flagler College in St. Augustine, Florida, where he teaches a course on energy economics.



ATTACHMENT II - QUALIFICATIONS FOR MARC A. VALLEN

Marc A. Vallen is a principal with Vallen Energy Consulting, LLC (“VEC”), a boutique consulting firm specializing in strategic planning, valuation and financial modeling to clients in the power industry. Mr. Vallen has over thirty years’ experience in the energy industry, the last twenty five in the power sector. He has been an employee with several different utilities as well as having spent many years providing consulting and advisory services to utilities and independent power companies.

Mr. Vallen’s areas of expertise include:

- Analyzing the economics of energy investments and power plants;
- Valuing power assets in competitive markets;
- Analyzing the economics of distributed generation, renewables and energy efficiency;
- Building financial and business models;
- Developing air emissions compliance strategies; and
- Strategic planning for senior management, including identifying and responding to emerging industry trends.

A brief summary of the positions Mr. Vallen has held is provided on the last page. Immediately below is a description of his background and assignments by area of expertise.

Generation

Marc A. Vallen has extensive experience in all aspects of generation, having led valuation, acquisition, development, repowering and daily dispatch optimization on more than 100,000 MW of power plants, including natural gas, coal, hydro, nuclear, solar, wind and biomass facilities ranging in size from 2 MW to 1,600 MW. Mr. Vallen understands how to measure and increase value from generation fleets, having structured acquisitions and divestitures of generation plants totaling over \$10 billion in value. Within a generation fleet, Mr. Vallen advises on acquisitions, development, repowering, capital budgeting decisions, and improvements in day-to-day plant operations. He also builds leading-edge financial and dispatch models to make daily dispatch decisions, optimizes plant performance, (re)negotiates fuel contracts, (re)negotiates PPAs, and puts in place hedging mechanisms for fuel prices.

Mr. Vallen has a unique background in his ability to apply his market assessment capabilities to real world acquisition and development transactions. His capabilities enable his team to more accurately determine the future value of generation assets and ensure that the due diligence process results in valuations with achievable, attractive returns.



Mr. Vallen's power plant expertise includes:

- Financial analysis, including:
 - Analyzing the relevant power market (supply and demand, projected forward price of electricity);
 - Forecasting future electricity, fuel and emissions allowance prices;
 - Building pro forma financial statements;
 - Financial modeling and power plant valuation;
 - Assembling and managing joint venture bidding teams;
 - Identifying and negotiating with debt and equity investors;
 - Determining overall value of power plants;
 - Developing bidding strategies; and
 - Developing and optimizing air emissions compliance strategies.
- Due diligence for acquisitions and development, including:
 - Conducting and coordinating the project team's due diligence site visits;
 - Assessing and valuing expansion and repowering opportunities;
 - Assessing fuel sources and prices;
 - Assembling and leading the environmental (air, ground and water) team;
 - Assembling and leading the engineering team;
 - Assembling and coordinating efforts with the legal team to ensure that key due diligence findings are included in the purchase and operating agreements;
 - Analyzing existing Power Purchase Agreements (PPAs); and
 - Performing transmission analysis.
- Developing new power plants, including:
 - Site selection;
 - Negotiating land options;
 - Negotiating new Power Purchase Agreements (PPAs);
 - Writing RFPs and negotiating EPC contracts; and
 - Acting as Project Manager throughout the development process.

Selected projects where Mr. Vallen has led a team or advised clients on market assessment, power plant acquisition, or power plant development efforts include:

- Led Sithe Energies' \$700 million acquisition of Boston Edison's generation portfolio. Developed pro forma financials and interfaced with debt and equity providers to finance the deal, which consisted of 2,000 MW of gas and oil fired steam units. Led the team that initiated the subsequent development of over 2,400 MW of new combined cycle units, including engineering, legal and



environmental analysis; market price forecasts, supply and demand projections, financial model and bidding strategy; and preparing the Information Memorandum for the \$1.25 billion mini-perm financing.

- Led Sithe Energies' \$1.6 billion acquisition of GPU's generation portfolio. Advised on the subsequent \$2.1 billion sale of that portfolio less than a year later. The acquired fleet consisted of 4,200 MW of coal, gas, oil and hydro facilities and potential development sites across multiple states. Led analysis of fuel pricing, electricity sales volume, electricity pricing projections and financial modeling to support acquisition and financing. Oversaw engineering, environmental remediation and legal due diligence, and identified development and repowering prospects.
- Led teams that have sited tens of thousands of MW of power plants for major developers throughout the United States. Fuel type has included gas, oil, coal, solar and biomass. Determined site location through market, infrastructure, environmental and regulatory analysis. Assessed fuel supply, transmission take away, water availability, site access and site-specific attributes. Visited hundreds of potential sites, and met with local authorities and landowners. Efforts led to numerous sites under control as the initial step in project development.
- Formed and led a consortium as the successful bidder for Cajun, a large coal-fired plant in Louisiana. Responsible for evaluating both the financial and physical condition of the plant, including detailed analysis of existing PPAs and long-term fuel contracts, and was also responsible for arranging the debt financing. (Although the consortium was the winner of the auction, the acquisition was ultimately not consummated due to a subsequent bankruptcy filing.)
- Led due diligence and valuation efforts for acquisition of a partially developed combined cycle power plant in the northwest U.S. Analysis included assessing the value of the partially developed plant and projecting the value of the completed facility. Analysis led to successful acquisition of Coyote Springs II and completion of development. Plant is now operable.
- Led due diligence on many of the power plant fleets that have been sold at auction since the late 1990s. Prepared market analysis, assessed forward prices for electricity and fuel, led environmental air assessment, oversaw environmental ground and water assessment, coordinated engineering and legal due diligence, and advised clients on bid price. Analysis covered generating fleets across NERC regions and consisting of practically every type of power plant: coal fired (eastern coal, western coal, subcritical, supercritical), gas and oil fired (steam,



combined cycle, simple cycle), hydro (high head, low head, pumped storage), nuclear, waste coal, biomass, wind and compressed air energy storage. Efforts have resulted in billions of dollars of acquisitions with positive returns.

Transmission & Distribution

Mr. Vallen has extensive experience in working with T&D systems. He and his team have modeled transmission flows, assessed constraints, quantified congestion, developed upgrade plans, valued entire transmission systems for acquisition, and advised on tens of millions of dollars of investments based on assessing T&D upgrades. The team has proprietary databases and models of the transmission grids in MISO, PJM, ISO-NE and NYISO that it has used to assess the locational marginal price and congestion for specific locations on the transmission grid. The team has assessed the electrical and financial impact of new generation, as well as numerous switchyard, substation and system upgrades.

Specifically, the team has:

- Valued transmission systems under regulated and merchant markets;
- Valued transmission contracts;
- Assessed the impacts of tens of thousands of MWs on the transmission grid;
- Analyzed switchyard and transmission system upgrade costs;
- Determined transmission path value to support acquisition, development and trading; and,
- Assessed transmission congestion to identify FTR trading strategies.

Specific experiences include:

- For a major transmission owner, reviewed and assessed ISO proposals allocating the costs of new transmission projects to ISO members. Responsible for preparing material to use in lobbying against the ISO's proposals and promoting an allocation methodology favored by the client.
- Co-founded a large hedge fund dedicated to investing in FTRs. Raised financing from an investor group, and structured the fund and management vehicles. Developed and implemented the investment strategy, which included identifying potential congested transmission paths and forecasting the future value of congestion based on the team's proprietary transmission analysis.
- Assessed the electrical and financial impact of numerous switchyard, substation and system upgrades. Assisted numerous U.S. power companies in determining the least cost method to move incremental power onto and across the transmission grid. Analyses included both electric system load flow and financial



modeling, resulting in solutions that are sound from both an engineering and business perspective.

- Led a team that analyzed transmission systems to identify cost-effective locations for building new generation. Analysis included both load-flow as well as an assessment of nodal pricing to find those locations that had higher congestion, and thus higher relative market prices, combined with lower costs to interconnect.
- Valued U.S. transmission systems for acquisition. Analyses have been based on existing tariffs, newly proposed rate-cap incentives and performance improvements. Increased transmission flow based on more competitive tariffs and refinancing solutions was also incorporated into the analysis, leading to increased value.
- Valued the transmission network, including the Provider of Last Resort Obligation, for a northeast utility. Analysis included assessing: the revenue generated under existing tariff structure and potential future tariff structures; potential cost savings opportunities; line losses and congestion charges; the rate at which customers would switch from the incumbent utility to new retail providers; and the cost of energy provided to remaining customers.

Strategic Planning

Mr. Vallen has extensive experience facilitating strategic planning sessions for both employers and clients. His strategy consulting practice has focused on business strategies to assist electric utilities in their transition to direct retail competition; marketing strategies and implementation plans to assist electric and gas utilities in offering new, value-added products and services; and valuation of generation assets and the component businesses of vertically integrated electric utilities.

Mr. Vallen has led strategy sessions for numerous companies across many of the major issues facing the power industry. Some of his strategic planning assignments are summarized below:

- As head of strategic planning for San Diego Gas & Electric Company, facilitated many strategy sessions for senior management to address key issues facing the utility and the industry, including increasing competition, regulatory strategy on both the state and federal levels, and developing a customer-oriented marketing program.
- For Detroit Edison, developed a strategic assessment of future competition and



facilitated a management discussion of strategies to best position the utility for a more competitive environment.

- For Pennsylvania Power & Light, assessed the opportunities for developing an unregulated company and facilitated the management discussion that led to making the investment. Subsequently developed and presented to management the strategy to create a competitive marketing program for its larger customers.
- For Houston Lighting & Power, assessed its marketing program and led a management discussion of strategies to improve its customer segmentation and new product development. Developed a strategic marketing plan to enhance HL&P's large and small customer marketing efforts.
- For Sithe Energies, a major independent power company, led the strategic team that identified and valued acquisition candidates. Subsequently led the due diligence teams that reviewed and acquired selected targets.
- For EEI and a group of leading economists, developed multiple scenarios of how future competition could unfold, and then facilitated the discussion that led to lobbying positions for EEI and the electric utility industry.

Distributed Generation and Energy Efficiency

Mr. Vallen is well versed in the economics of distributed generation ("DG") and energy efficiency, having been one of the pioneers in the industry in first offering these services to his core customer base at SDG&E. Mr. Vallen has developed DG and energy efficiency programs for utilities as well as co-founded and run an energy service company offering these products to end-users. Some of his experiences with DG and energy efficiency include:

- Developed a complex financial model for a large west coast utility to assess the economics of distributed generation for both the customers and the client utility. Technologies assessed ranged from traditional natural-gas fired combined heat and power to renewables such as solar, biomass, wind, and small-scale hydro. Led the effort to use the model to assess the impact of individual distributed generation projects on the client utility's grid, and to also design and implement a marketing program to promote DG to the client utility's customers.
- As Senior Vice President and co-founder of Demand-Side Resources, an energy services company owned by Palmer Bellevue, led the team that won several DSM bids from utilities. Subsequently partnered with Johnson Controls to deliver the energy efficiency measures to large commercial and industrial customers.



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Also led the team that designed, developed and managed the largest load curtailment program in the U.S. for Commonwealth Edison and its large commercial and industrial customers.

- At SDG&E, established the marketing strategy and helped design its nationally renowned DSM program. Developed the first program for utility ownership of customers' on-site energy infrastructure, a precursor for distributed generation.
- As a consultant, responsible for strategic assessment of several DSM programs for clients, as well as for designing and/or reviewing DSM programs, typically focusing on the economics of the program from the perspective of both the customer and the utility. Also responsible for designing marketing organizations that could implement the DSM programs effectively.
- As Vice President of Business Development at DTE Energy, led the new business effort for acquiring on-site customer energy infrastructure. Responsible for identifying potential targets and then submitting to major industrial customers proposals to acquire and operate the energy infrastructure at their facilities.

Education

Mr. Vallen holds a MBA degree in finance and accounting from the Stanford Graduate School of Business in Stanford, California. He also has a BA degree in economics and mathematics from Pomona College in Claremont, California.



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Positions Held

Year	Employer	Location	Position	Description
2008 - 2013	Vallen Energy Consulting	St. Augustine, FL and Ann Arbor, MI	Founding Principal	Boutique consulting firm offering strategic support, financial analysis and financial modeling to power sector clients
2009	Early Stage Development Fund	Ann Arbor, MI	Founding Principal	Unsuccessful attempt to establish an equity fund investing in early-stage gas-fired power plants
2005 - 2008	330 Fund / 330 Investment Management	Chicago, IL	President and Co-Founder	Co-founder of a hedge fund and its management company created to invest in financial transmission rights
2000 - 2005	DTE Energy Resources	Ann Arbor, MI	Vice President	VP, Business Development and Acquisitions and VP, Market Analysis for DTE's unregulated businesses
1997 - 2000	CornerStone Energy Advisors	Chicago, IL	President and Co-Founder	Co-founder of CEA, a financial and strategic advisory firm that assisted clients with valuing, developing and acquiring power assets
1988 - 1997	Palmer Bellevue / Coopers & Lybrand Consulting	Chicago, IL	Vice President / Managing Director	Provided strategic consulting and financial services to the utility, natural gas, independent power and related industries
1990 - 1995	Demand-Side Resources	Chicago, IL	Sr. Vice President and CFO	Co-founder of Palmer Bellevue's energy conservation affiliate that delivered customized DSM services on a pay-for-performance basis
1985 - 1988	San Diego Gas & Electric Company	San Diego, CA	Manager	Manager, New Products & Services and Manager, Corporate Strategy for SDG&E's regulated and unregulated activities
1980 - 1985	Atlantic Richfield Company (ARCO)	Los Angeles, CA	Supervisor and Trader	Supervisor, Operations Performance Analysis; Senior Product Trader; Oil Futures Project Manager; and Senior Financial Analyst
1976 - 1978	Southwest Gas Corporation	Las Vegas, NV	Financial Analyst	Prepared testimony, analyzed investment opportunities, and assisted with debt/equity financings for this integrated natural gas company

CERTIFICATE OF SERVICE

I certify that on behalf of NOAC and the Individual Communities a copy of the above Testimony of Marc Vallen was served electronically on the parties listed below electronically on 22 December 2014.

/s/ Thomas R. Hays, Counsel

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This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/22/2014 11:27:54 AM

in

Case No(s). 14-1297-EL-SSO

Summary: Testimony Testimony of Marc A. Vallen filed by NOAc and the Individual Communities electronically filed by Mr. Thomas R. Hays on behalf of NOAC and Lucas County Board of Commissioners and City of Toledo and City of Sylvania and Village of Ottawa Hills and City of Perrysburg and City of Northwood and City of Maumee and The Village of Holland and The Village of Waterville and Lake Township Board of Trustees