OCC EXHIBIT NO. _____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company For Authority to Provide for a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan	))))))))	Case No. 12-1230-EL-SSO

DIRECT TESTIMONY
of
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On Behalf of
The Office of the Ohio Consumers' Counsel

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I. INTRODUCTION

Q 1: PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A: My name is James F. Wilson. I am an economist and principal of Wilson Energy Economics. My business address is 4800 Hampden Lane Suite 200, Bethesda, MD 20814.

Q 2: PLEASE DESCRIBE YOUR EXPERIENCE AND QUALIFICATIONS.

A: I have over twenty-five years of consulting experience to the electric power and natural gas industries. Many of my past assignments have focused on the economic and policy issues arising from the introduction of competition into these industries, including restructuring policies, market design, and market power. Other engagements have included contract litigation and damages; pipeline rate cases; forecasting and market assessment; evaluating allegations of market manipulation; probabilistic modeling of utility planning problems; and a wide range of other issues arising in these industries. I also spent five years in Russia in the early 1990s advising on the reform, restructuring, and development of the Russian electricity and natural gas industries for the World Bank and other clients. I have submitted affidavits and presented testimony in proceedings of the Federal Energy Regulatory Commission, state regulatory agencies, and a U.S. district court.

I have been involved in electricity restructuring and wholesale market design for over twenty years in PJM, New England, Ontario, California, Russia, and other regions. With regard to the PJM system, I have been involved in a broad range of market design, planning and capacity market issues over the past several years. I hold a B.A. in Mathematics from Oberlin College and an M.S. in Engineering-Economic Systems from Stanford University. My curriculum vitae, summarizing my experience and listing past testimony, is Attachment JFW-1 attached hereto.

Q 3: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?

A: Yes. I testified in Case No. 09-906-EL-SSO, involving the 2009 application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company (collectively, "FE Companies" or "Applicants") for approval of a Market Rate Offer ("MRO"), which ultimately led to the approval and implementation of the Applicants' current Electric Security Plan ("ESP").

Q 4: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: I was asked by the Office of the Ohio Consumers' Counsel ("OCC") to review the FE Companies' Application, the associated Stipulation and Recommendation ("Stipulation"), and the supporting testimony and discovery responses in this proceeding; identify any issues related to offering demand response and energy efficiency resources in RPM auctions and proposed changes to the competitive

bidding process; and evaluate various statements about the potential benefits of expedited approval of the Application.

II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Q 5: PLEASE SUMMARIZE THE APPLICATION AND THE STATED BASIS FOR THE REQUEST FOR EXPEDITED APPROVAL.

A: The FE Companies propose to extend the provisions of their current ESP with certain changes, and refer to the proposed new ESP as "ESP 3." The FE Companies state that expedited approval by May 2, 2012 "is expected to permit the Companies to bid demand response resources and PJM-qualified energy efficiency resources into the 2015/2016 PJM Base Residual Auction ("BRA") commencing on May 7, 2012." Application, p. 3. The Applicants also propose to change the bid product for the upcoming generation auctions to a three-year product to "take advantage of historically low market prices for wholesale electric generation." Id. The Applicants request approval by June 20, 2012, stating that this is needed to allow time to implement this change.

Q 6: WHAT IS YOUR RECOMMENDATION REGARDING EXPEDITED APPROVAL OF THE APPLICATION?

A: The Application should not be approved in haste. The FE Companies' service territories have undergone enormous changes in the past year. These developments have resulted in extraordinary uncertainty about future market

conditions and prices for the FE Companies' service territories. This uncertainty will not be resolved in a matter of months or a year, and creates unusual risks for potential bidders in the auctions to be held in October 2012 and January 2013, which could reduce competition and raise offer prices. Under these circumstances, expedited approval of the Application without thorough evaluation, including by parties that did not sign the Stipulation, would be unwise.

Q 7: PLEASE ELABORATE ON THE RECENT DEVELOPMENTS IN THE FE COMPANIES' SERVICE TERRITORIES.

A: The FE Companies' transmission affiliate, American Transmission Systems, Incorporated ("ATSI"), was integrated into the transmission system operated by PJM Interconnection, L.L.C. ("PJM") as of June 1, 2011, bringing the FE Companies, and their affiliate Penn Power, into PJM. Since then, PJM determined that the ATSI zone will be a separate pricing zone for RPM purposes. Most important, since the beginning of this year, the retirement of several major power plants serving the region has been announced.

These retirements will substantially reduce the supply to the zone beginning September 1, 2012, which would be expected to raise energy, ancillary services and capacity prices. The retirements already resulted in much higher capacity prices for the zone for the 2015-2016 delivery year in the RPM base residual auction held earlier this month, for which the results were posted on May 18,

2012.[1] The clearing price for Annual resources located in the ATSI zone was $357.00/MW-day, compared to $136.00/MW-day for such resources located in the surrounding PJM region.[2] As a result of the definition of the ATSI zone in the RPM auction, consumers in the ATSI zone will pay much more for capacity, and generation located in the zone, the majority of which is owned by the FE Companies' affiliate, FirstEnergy Solutions Corp. ("FES"), will earn much higher capacity prices than power plants in surrounding areas.

The retirements are likely to eventually lead to proposals to develop new generation, transmission, demand response and energy efficiency in the zone, and some of the market response planned for the 2015-2016 delivery year may have been reflected in the results of the recent RPM base residual auction. Meanwhile, PJM is planning substantial transmission upgrades to address reliability issues raised by the retirements, but acknowledges that many of the upgrades would not be needed if existing plants are repowered or new generation is developed.

It is too soon to know the impact of the loss of generation, the timing and extent of transmission upgrades, the market reaction to provide new generation, demand response and energy efficiency, and the resulting supply-demand balance for this zone, in particular for the 2013-2016 period. Accordingly, these circumstances

[1] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012.
[2] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012, p. 1.

result in substantial uncertainty about future energy, ancillary services and capacity prices for the ATSI zone.

Q 8: PLEASE SUMMARIZE YOUR EVALUATION AND CONCLUSIONS REGARDING THE POTENTIAL BENEFITS OF THE PROPOSED CHANGE TO THE COMPETITIVE BIDDING PROCESS.

In his Supplemental Testimony (p. 6), while acknowledging that "no one can know with certainty," FE Companies' Witness Ridmann states that with the change to a three-year product, "we are trying to lock in those expected lower prices." However, this alleged benefit of the proposed change is doubtful. First, it ignores the enormous uncertainty and risk, described above, resulting from the impending generation retirements and possibility that the ATSI zone will be a constrained zone with higher energy and ancillary services prices over the coming years. Second, it rests on the fallacious assumption that current low prices can be locked in for future years. Offer prices will reflect the forward curve, for which the trend has been downward. The forward curve reflects market participants' expectations of the future value of the commodity, and can move upward or downward from any point in time as new information becomes available and expectations change.

Q 9: WHAT IS YOUR CONCLUSION AND RECOMMENDATION WITH REGARD TO THE FE COMPANIES' PROPOSAL TO ACQUIRE A THREE-YEAR PRODUCT IN THE UPCOMING GENERATION AUCTIONS?

A: In general, including a three-year product will tend to smooth out generation costs, reducing consumers' exposure to the ups and downs of generation prices and forward expectations. However, in light of the present and anticipated circumstances in the ATSI zone, it is not clear that the FE Companies' proposal is advantageous at this time. The enormous changes in the zone and uncertainty about future supply conditions create significant uncertainty and risk for potential bidders in these auctions, especially for the out years, and this could result in higher risk premiums and generation prices.

The FE Companies' proposed change to a three-year product may not be in the interest of consumers at this time, and it may be more advantageous to acquire a two-year or one-year product in the auctions to be held in October 2012 and January 2013.

Q 10: DO ALL POTENTIAL BIDDERS FACE ROUGHLY THE SAME LEVEL OF RISK IN REGARDS TO THE CHANGES IN THE ATSI ZONE AND THE UNCERTAINTY ABOUT FUTURE SUPPLY CONDITIONS THAT YOU PREVIOUSLY DESCRIBED?

A: No. These risks are especially acute for potential bidders with resources located outside of the FE Companies' service area. If there are transmission constraints

into the ATSI zone, such bidders would be exposed to congestion costs to serve loads in the ATSI zone. The uncertainty and risk of congestion costs will likely lead such bidders to raise their offer prices into the generation auctions, or even decline to participate, leading to higher clearing prices in the auctions.

Entities with resources located in the ATSI zone are less affected by the possibility of transmission constraints and congestion costs. Therefore, the proposal would appear to benefit the FE Companies' affiliate, FES, that owns most of the generation located in the ATSI zone. At the same time, FES stands to benefit from the higher auction clearing prices that will result from these uncertainties and risks that cause other bidders to raise their offer prices.

Q 11: PLEASE SUMMARIZE YOUR EVALUATION AND CONCLUSIONS REGARDING THE POTENTIAL BENEFITS HAD THE FE COMPANIES OFFERING DEMAND RESPONSE AND ENERGY EFFICIENCY RESOURCES IN THE MAY 2012 RPM AUCTION.

A: The FE Companies stated that "time is of the essence" and the Commission must "act quickly," because expedited approval would allow them to offer demand response resources ("DR") and energy efficiency resources ("EE") into the May 2012 RPM auction for the 2015-2016 delivery year. Application, p. 3. However, many demand resources located within the ATSI zone participated in the auction and cleared, apparently without the FE Companies' involvement; 1,763.7 MW of demand resources in the ATSI zone cleared in the auction, an increase of 808

MW compared to the prior auction for the 2014-2015 delivery year.[3] Demand resources can participate in RPM auctions either directly or through Curtailment Service Providers (PJM market participants who work with retail customers to provide demand response in the PJM markets).

I evaluated the potential impact of a small, incremental quantity of DR and EE on 1) resource adequacy and 2) base residual auction clearing prices for the 2015/2016 delivery year. I conclude that there is no discernible impact on resource adequacy, because such resources can be offered into any of the three incremental auctions that will be held for the delivery year, and, if needed for resource adequacy, will clear and provide service.

With respect to the potential impact of incremental DR and EE on the clearing price in the recent RPM base residual auction, this was uncertain. In general, incremental low-cost resources tend to lower RPM clearing prices. However, under the circumstances of this auction, incremental EE resources may have had no impact on the clearing price because the auction may have cleared such Annual resources[4] on a flat segment of the capacity supply curve. Incremental DR would lower the separate clearing price applicable to some types of demand

[3] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012, Table 3A p. 8.
[4] As will be explained further below, under the RPM rules "Annual" resources include generation, energy efficiency and demand resources available throughout the year without limitation, and are distinguished from "Limited" demand resources and "Extended Summer" demand resources that provide capacity on a more restricted basis. Limited and Extended Summer demand resources in the ATSI zone cleared at lower prices than Annual resources in the recent RPM auction.

resources; however, the savings from this would not be very large as this price applies to only a small portion of the capacity resources. Overall, I conclude that the potential benefit to customers of the FE Companies offering incremental DR and EE located in the ATSI zone into the RPM auction was uncertain and may have been zero or small.

Q 12: PLEASE SUMMARIZE YOUR CONCLUSION REGARDING THE FE COMPANIES' RATIONALE FOR AN EXPEDITED PROCESS IN THIS PROCEEDING.

A: I do not find the Companies' rationale at all compelling. Future movements of the forward curve cannot be predicted and can go either way, up or down. Due to the heightened uncertainty and risk for potential suppliers to the ATSI zone at this time, going to a three-year product to attempt to "lock in" current prices may not be in the interest of customers.

Q 13: HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

The next section of my testimony describes the recent changes in the FE Companies' service territory and the resulting uncertainty about future supply conditions. The following section discusses the proposed change to the bid product. The final major section discusses the potential benefit of DR and EE offered into the RPM auction.

III. RECENT DEVELOPMENTS IN THE FE COMPANIES' SERVICE TERRITORIES HAVE RESULTED IN HEIGHTENED UNCERTAINTY AND RISK FOR POTENTIAL SUPPLIERS

Q 14: PLEASE ELABORATE ON THE CHANGES IN THE FE COMPANIES' SERVICE TERRITORIES OVER THE PAST YEAR.

A: As of June 1, 2011, the FE Companies' transmission affiliate, ATSI, was integrated into PJM. Late in 2011, PJM decided to define the ATSI zone as a separate zone for purposes of RPM, allowing a separate and potentially much higher RPM price to be set for the zone.

The most significant recent developments affecting the ATSI zone were the announcements in January and February, 2012, by FirstEnergy[5] and GenOn,[6] of plans to retire several large generating units located in the zone. PJM has been scrambling this spring to evaluate the potential reliability impacts of the requested retirements and identify needed transmission upgrades to accommodate the retirements. The impending retirements and transmission upgrades result in extraordinary uncertainty about energy, ancillary services and capacity supply conditions, and resulting prices, in the ATSI zone for the coming months and years.

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[5] FirstEnergy news release, *FirstEnergy, Citing Impact of Environmental Regulations, Will Retire Six Coal-Fired Power Plants,* January 26, 2012.
[6] GenOn news release, *GenOn Reports 2011 Results and Announces Expected Deactivation of Generation Units*, February 29, 2012.

Q 15: PLEASE SUMMARIZE THE IMPENDING GENERATION RETIREMENTS IN THE ATSI ZONE.

A: The FE Companies' generation affiliates will retire 1,332 MW of capacity in the ATSI zone by September 1, 2012, and an additional 885 MW by June 1, 2015, according to PJM's evaluation of the retirement requests.[7] GenOn will retire 1,283.5 MW of capacity in the ATSI zone, including 217 MW by June 1, 2012 and the remainder by April 16, 2015.[8] The retirements represent approximately 20% of the total quantity of capacity needed for reliability in the ATSI zone.[9]

Q 16: HOW IS THE POWER SYSTEM SERVING THE ATSI ZONE EXPECTED TO ADAPT TO THE IMPENDING RETIREMENTS?

A: There are a number of ways the power system can adapt to the retirements and loss of generating capacity. The retiring plants can be repowered, or new generating capacity can be constructed on the existing sites. New generation, demand response and energy efficiency can be developed near the locations of the retiring plants, or elsewhere within or near the zone. And the transmission system can be upgraded, to adapt the grid to the loss of generation and to permit

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[7] PJM, *First Energy Generator Deactivation Request – January 2012 – Deactivation Study Results and Required Upgrades – April 25, 2012*. The report states that Armstrong units 1 and 2, Bay Shore units 2, 3 and 4, Eastlake units 4 and 5, and R. Paul Smith units 3 and 4 will deactivate as of September 1, 2012, while Ashtabula 5, Eastlake units 1, 2 and 3, and Lake Shore 18 will continued to operate while upgrades to the transmission system are constructed.

[8] PJM, *Pending Deactivation Requests*, available at http://www.pjm.com/planning/generation-retirements/~/media/planning/gen-retire/pending-deactivation-requests.ashx; the most recent update to this list is dated May 9, 2012.

[9] Comparing the total quantity retiring, 3,500 MW in unforced capacity terms, to the ATSI zone reliability requirement as identified for the 2015/2016 RPM base residual auction.

generation from other locations to be delivered where it is needed within the ATSI zone.

Q 17: HOW HAS THE MARKET RESPONDED TO THE ANTICIPATED LOSS OF THIS GENERATION CAPACITY?

A: It is too soon to be able to identify how the market may respond to the planned retirements, which were announced only a few months ago. PJM's list of interconnection requests shows very little new capacity proposed for the ATSI zone for the next few years.[10] The results of the recent RPM auction pertain to the 2015-2016 delivery year, three years out, and likely reflect only a portion of the ultimate reaction for that delivery year.

Q 18: WHY DO PJM'S INTERCONNECTION QUEUES REFLECT VERY LITTLE NEW CAPACITY PLANNED FOR THE ATSI ZONE AT THIS TIME?

A: This may reflect the fact that before the retirements were announced, and before PJM announced that it would allow the ATSI zone to have a separate RPM price, the ATSI zone was part of the broader "Rest of RTO" region of PJM that had been characterized by excess capacity and relatively low prices for energy, ancillary services and capacity. Therefore, before these developments, there did not appear to be a need for new capacity in the ATSI zone.

[10] PJM interconnection queue data, available at http://www.pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

Q 19: ARE THERE ANY MAJOR NEW POWER PLANTS PROPOSED FOR THE ATSI ZONE AT THIS TIME?

A: Yes. The one substantial proposal is for combustion turbines ("CTs") that the FE Companies' affiliate, FirstEnergy Generation Corp., has proposed to build at its existing Eastlake site, as announced on March 8, 2012.[11] The proposal consists of four 231-MW CTs, which in unforced capacity terms would come to a total of 840 MW. While these projects were only queued on March 8, 2012, they became eligible for the RPM auction (with the required feasibility studies already completed and the interconnection studies underway[12]), and were offered into the RPM auction. However, the FE CTs apparently were offered at a price greater than $357/MW-day (the clearing price for the ATSI zone), because they failed to clear the auction.[13] Other projects in the interconnection queue for the ATSI zone are much smaller based on capacity value, with the exception of two new projects for 2016 or later.

[11] FirstEnergy news release, *FirstEnergy Generation Corp. Files Interconnection Study Request with PJM for New Generation in Eastlake*, March 8, 2012.
[12] PJM interconnection queue data. The FE CTs are projects Y1-035 and Y1-036.

[13] FirstEnergy SEC Form 8-K filed May 18, 2012, p. 4 ("The results of the 2015/2016 PJM Interconnection, LLC, Reliability Pricing Model capacity auction were released May 18, 2012. The four 208 megawatt gas-fired, simple-cycle peaking units offered into the auction by FirstEnergy Solutions Corp. did not clear the auction.")

Q 20: PLEASE SUMMARIZE PJM'S PLANS FOR TRANSMISSION UPGRADES TO ADDRESS THE RELIABILITY ISSUES RELATED TO THE ATSI ZONE RETIREMENTS.

A: PJM summarized numerous transmission upgrades that would be needed for the ATSI zone in a presentation to its Transmission Expansion Advisory Committee ("TEAC") on April 12, 2012, repeatedly describing the analysis as "a work in progress."[14] PJM called a special meeting of the TEAC for April 27, 2012 at which a later version of the analysis and list of identified upgrades was again presented, along with cost estimates.[15] PJM requested and received approval of most of the transmission upgrades at the PJM Board's May 17, 2012 meeting.[16]

The upgrades for the ATSI zone occupied approximately 48 slides within the April 27, 2012 TEAC presentation. PJM estimated the total cost of the transmission upgrades to address ATSI zone issues to be over $600 million for upgrades needed by June 1, 2015, and over $800 million for additional upgrades needed by 2018. A small portion of this cost (apparently $53 million) was for

[14] PJM, *Reliability Analysis Update*, presentation to Transmission Expansion Advisory Committee April 12, 2012, available at http://www.pjm.com/~/media/committees-groups/committees/teac/20120412/20120412-reliability-analysis-update.ashx.

[15] PJM, *TEAC Reliability Analysis Update – Conference Call*, presentation to Transmission Expansion Advisory Committee April 27, 2012, available at http://www.pjm.com/~/media/committees-groups/committees/teac/20120427/20120427-teac-reliability-analysis-update-conference-call.ashx.

[16] PJM new release May 17, 2012, *$2 BILLION OF INVESTMENTS IN POWER GRID TO EASE POWER PLANT RETIREMENTS PJM Board Approves Electric Transmission Upgrades*, available at http://www.pjm.com/~/media/about-pjm/newsroom/2012-releases/20120517-Two-billion-dollars-of-upgrades-to-power-grid.ashx.

upgrades that had been included in earlier transmission plans, and whose schedules would now be advanced.

Q 21: WERE ALL OF THESE TRANSMISSION UPGRADES REFLECTED IN THE RESULTS OF THE RPM AUCTION?

No. The transmission upgrades affect the RPM results because they determine the amount of capacity from outside the ATSI zone that can meet capacity needs within the zone (the capacity import limit, or "CETL"). PJM originally posted the planning parameters for the May RPM auction on February 1, 2012, and those parameters reflected only a few of the transmission upgrades that are now planned. The planning parameters for the auction were updated April 6, 2012 and again on April 17, 2012, and reflected many more transmission upgrades, increasing the capacity import limit for the ATSI zone from 3,517 MW, as posted February 1, 2012, to 5,418 MW.[17] However, many more transmission upgrades for the ATSI zone were identified later in April after the planning parameters were finalized, which could have further increased the capacity import capability and moderated ATSI prices. In cost terms, the final auction planning parameters and capacity import limit reflected under $200 million in transmission upgrades, compared to over $600 million now planned based on PJM's additional work in April after the planning parameters were finalized.

[17] PJM, *2015/2016 RPM Base Residual Auction Planning Parameters*, excel spreadsheet dated April 17, 2012, available at http://www.pjm.com/markets-and-operations/rpm/~/media/markets-ops/rpm/rpm-auction-info/2015-2016-planning-period-parameters.ashx, tab "Planned Transmission Upgrades."

Q 22: WILL ALL OF THESE TRANSMISSION UPGRADES ULTIMATELY BE CONSTRUCTED?

A: That is unclear. PJM acknowledged at the April 27 TEAC meeting that, should some of the units announced for retirement instead be repowered, the need for the associated transmission upgrades would be obviated. Similarly, if new generation, demand response or energy efficiency resources are developed in locations near the retiring power plants, the need for transmission upgrades could be reduced or eliminated.

Q 23: PLEASE SUMMARIZE THE RECENT DEVELOPMENTS IN THE ATSI ZONE AND THEIR SIGNIFICANCE IN THIS PROCEEDING.

Future generation supply and prices for the ATSI zone must be considered highly uncertain at this time, due to the large amount of plant retirements, the numerous planned transmission upgrades, and the uncertain market reaction to provide new generation, demand response and energy efficiency capacity. The zone may frequently be constrained and have generally higher prices than the surrounding areas of the grid, but the extent to which this will occur is uncertain. This creates substantial uncertainty and risk for potential bidders into the generation auctions to be held this fall and winter.

Q 24: ARE FORWARD PRICES AVAILABLE FOR THE ATSI ZONE THAT WOULD BE INDICATIVE OF MARKET PARTICIPANTS' EXPECTATIONS REGARDING FUTURE ATSI ZONE PRICES?

A: No. At present the ATSI zone is not defined as a trading point, and forward prices specifically for the ATSI zone are not available. However, representatives of Intercontinental Exchange state that they plan to introduce an ATSI product in the coming months. \

IV. THE POTENTIAL BENEFITS OF THE FE COMPANIES' PROPOSED CHANGE TO THE COMPETITIVE BIDDING PROCESS ARE DOUBTFUL AND DO NOT JUSTIFY EXPEDITED APPROVAL OF THE APPLICATION

Q 25: PLEASE SUMMARIZE THE CHANGE TO THE COMPETITIVE BID PROCESS PROPOSED IN THE APPLICATION.

The Applicants propose to change the product to be acquired in the October 2012 and January 2013 auctions to a three-year product, for the period June 2013 through May 2016, rather than a one-year product, as presently scheduled. Between the two auctions, 34 tranches would be acquired, corresponding to roughly one-third of the applicable load. The other two-thirds have already been acquired for the June 2013 through May 2014 period.

Q 26: WHAT IS THE POTENTIAL VALUE OF THE CHANGE TO THE COMPETITIVE BID PROCESS FOR CUSTOMERS, ACCORDING TO THE APPLICANTS?

A: Witness Ridmann in his Supplemental Testimony states (p. 6), "The value comes in the form of an expectation of lower prices and more stable prices over the life of ESP 3." He further states that "for every $1/MWH decrease in the future blended auction clearing price, our non-shopping customers would save approximately $13.2 million per year."

Q 27: WOULD THE PROPOSED CHANGE TO THE COMPETITIVE BID PROCESS LIKELY RESULT IN MORE STABLE GENERATION PRICES FOR CONSUMERS OVER THE LIFE OF ESP 3?

A: Yes, acquiring three-year commitments would most likely lead to more stable prices. With staggered three-year products, the generation price to consumers in each year is an average of prices set in auctions over three recent years. This will tend to be more stable than if only one-year products are used and the generation price to consumers only reflects conditions from the most recent period.

Q 28: WOULD THE PROPOSED CHANGE LEAD TO LOWER GENERATION PRICES FOR CONSUMERS?

A: This is uncertain, as witness Ridmann acknowledges in his Supplemental Testimony (p. 6; "no one can know with certainty"). Offer prices will reflect the forward curve, for which the trend in recent years has actually been downward

and not upward as Mr. Ridmann expects. Exhibit JFW-1 shows the forward curve for the PJM Western Hub, a relatively liquid trading point representing a broad area that includes the ATSI zone. The exhibit shows that the forward curve declined from May 1, 2009 to May 1, 2010, remained at about the same level between May 1, 2010 and May 1, 2011, and then again declined from May 1, 2011 to May 1, 2012.

The forward curve reflects market participants' expectations of the future value of the commodity, and can move upward or downward from any point in time as new information becomes available and expectations change. So it is unknown whether the forward curve for 2014 through 2016 will move up or down between now and the auctions in October 2012 and January 2013, or during the months and years following those auctions. Indeed, as the four curves in Exhibit JFW-1 show, recent forward curves have reflected expectations that prices will rise in future years, when in fact prices have fallen.

Furthermore, the auctions will seek power deliverable to the Companies' customers, in the ATSI zone. As I have explained, supply, deliverability and prices for the ATSI zone are particularly uncertain over the coming months and years primarily due to the large number of retirements affecting the zone. This uncertainty creates risk for suppliers that may result in higher auction prices, especially for multiple years into the future. I do not see a basis for Mr. Ridmann's perspective, that we should expect prices for generation during the

2014 to 2016 period to be lower in October 2012 and January 2013 than a year later.

Q 29: ENERGY AND WHOLESALE ELECTRICITY PRICES HAVE DECLINED RECENTLY. DOES THAT SUGGEST THE PRESENT IS A RELATIVELY FAVORABLE TIME TO LOCK IN PRICES UNDER MULTI-YEAR COMMITMENTS?

A: No. The prices at which market participants are willing to enter into multi-year commitments at any time are based on their expectations of future prices and value. It is not possible to lock in current prices for multiple years unless those prices happen to equal market participants' expectations regarding fair prices for future deliveries, and the forward curve reflects those expectations. As always, relative to a multi-year price established at the present time, actual prices in the future delivery years may be higher or lower.

The forward curve could continue downward or turn back upward depending upon various future developments. If market participants generally believed, as witness Ridmann apparently does, that the forward curve at present is a better deal than it will be in the future, there would be more buyers than sellers at those prices, because buyers would prefer to transact now while sellers would prefer to wait for the coming higher prices. This would cause the forward curve prices to immediately rise in order to balance supply and demand under these expectations.

Q 30: DO YOU EXPECT THAT OCTOBER 2012 AND JANUARY 2013 WILL BE RELATIVELY ADVANTAGEOUS TIMES TO ATTEMPT TO LOCK IN ATSI ZONE PRICES FOR A LONGER PERIOD, AS THE FE COMPANIES ARE PROPOSING?

A: There are good reasons to doubt that this will be the case. The coming months are a time of heightened uncertainty about future supply conditions for the ATSI zone served by the FE Companies. This uncertainty may raise the prices bidders offer into these auctions. The implicit price required for the out years of a multi-year commitment may reflect a large risk premium.

Potential bidders with resources located outside the ATSI zone may consider the ATSI zone extraordinarily risky at this time, and may incorporate a higher risk premium in their bids. PJM's analyses (for instance, as reflected in the planning parameters for the RPM auction[18]) suggest that due to the FE and GenOn retirements, the zone will be short of capacity and there may be transmission constraints leading to higher locational energy prices inside the ATSI zone than outside. Bidders with resources located outside the zone would be at risk for these price differences, or would have to incur additional costs to attempt to hedge these risks.

[18] PJM, *2015/2016 RPM Base Residual Auction Planning Parameters*, updated April 17, 2012, available at http://www.pjm.com/markets-and-operations/rpm/~/media/markets-ops/rpm/rpm-auction-info/2015-2016-planning-period-parameters.ashx (showing the Capacity Emergency Transfer Limit, or "CETL", just slightly larger than the Capacity Emergency Transfer Objective, or "CETO", for the ATSI zone, suggesting only a small margin of transmission above the amount required to meet reliability objectives).

Q 31: CAN POTENTIAL BIDDERS HEDGE THESE RISKS?

A: This is difficult for the ATSI zone, and especially for three and more years ahead. To the extent potential bidders are comfortable with hedges for a broader market region, such as the PJM Western Hub, hedges are available, but three-year agreements are always more uncertain and more difficult to hedge. Exhibit JFW-2 shows the prices, monthly volume and open interest for the PJM Western Hub forward curve, for July of 2012, 2013, 2014 and 2015. This exhibit shows that volume and open interest at this relatively liquid hub drop off significantly for contracts three or four years into the future. The open interest (the number of outstanding contracts) is a measure of market activity, and is shown by the red lines and red boxes in Exhibit JFW-2. As of May 1, 2012, open interest was 4,893 contracts for the July 2012 contract, 1,650 contracts for July 2013, 1,210 contracts for July 2014 and only 115 contracts for July 2015. This suggests a much higher level of market activity for delivery months up to one and two years away, and a much lower level of activity for prices three years out. Thus, prices three years out will be more difficult to hedge.

Q 32: HOW DO THESE UNCERTAINTIES AND RISKS IMPACT POTENTIAL BIDDERS IN THE UPCOMING GENERATION AUCTIONS?

A: Greater uncertainty and risk with respect to market conditions, and greater difficulty in hedging commitments three or more years out, will likely cause suppliers to include larger risk premiums in their bids or to decline to participate.

In addition, potential suppliers will be concerned about the uncertainties and risks specific to the ATSI zone. The locational price risk has less impact on entities with resources located within the zone. Therefore, the FE Companies' affiliate FES, that owns most of the generation in the ATSI zone, is less affected by these risks. But at the same time, FES stands to benefit from the higher auction clearing prices that will likely result if these risks lead other bidders to raise their offer prices.

Even if only a one-year product is included in the upcoming auctions, the uncertainties and risks affecting the ATSI zone may cause many suppliers to raise their offer prices into the upcoming auctions, benefiting the FE Companies' affiliate FES whose resources are located in the zone. If a three-year product is auctioned, as the FE Companies propose, the impact on prices, and benefit to the FE Companies' affiliate, will likely be much larger due to the greater risk and more difficulty in hedging over the longer horizon.

Q 33: WHAT IS YOUR RECOMMENDATION WITH REGARD TO THE PROPOSAL TO INCLUDE A THREE-YEAR PRODUCT IN THE GENERATION AUCTIONS?

A: In general, including a three-year product will smooth out generation costs, reducing consumers' exposure to the ups and downs of generation prices and forward expectations. However, at the present time in the ATSI zone, there is heightened uncertainty and risk faced by potential bidders in the auctions (and

especially for potential bidders with resources located outside of the ATSI zone). The relatively high clearing price for the ATSI zone in the recent RPM auction suggests heightened risk that the zone may have a relatively low reserve margin in 2015-2016, however, there is time for the market to respond with additional generation, demand response and transmission serving the zone for this delivery year. Under these uncertain circumstances, going to a three-year product would appear to not be in the interest of consumers.

Q 34: THE FE COMPANIES REQUEST THAT THE COMMISSION APPROVE THEIR ESP BY JUNE 20, 2012 TO "ATTEMPT TO CAPTURE THE CURRENT HISTORICALLY LOW GENERATION PRICES." DOES THIS JUSTIFY EXPEDITED APPROVAL OF THE APPLICATION?

A: No. As I have explained, current low prices cannot be locked in through acquisition of three-year products; the prices in those products will reflect anticipated future supply, demand and price, not current conditions. Those expectations may move upward or downward in the coming months and years as conditions evolve. Due to the heightened uncertainty about supply, demand and price in the ATSI zone at present, October 2012 and January 2013 may not be advantageous times to attempt to "lock in" price for a longer period. The customers' interest may be better served by seeking two- or one-year commitments in these auctions rather than three-year commitments.

V. THE IMPACT OF INCREMENTAL DEMAND RESOURCES AND ENERGY EFFICIENCY RESOURCES ON RPM PRICES IS UNCERTAIN AND MANY DEMAND RESOURCES PARTICIPATED IN RPM WITHOUT THE FE COMPANIES' INVOLVEMENT

Q 35: WHAT IN GENERAL ARE THE POTENTIAL BENEFITS OF DEVELOPING ADDITIONAL DR AND EE RESOURCES?

A: As is well known, incremental DR and EE provide numerous benefits. They can be low-cost resources that moderate capacity, energy and ancillary services prices. Incremental DR and EE can lower consumer costs by reducing the need to build new power plants. These resources displace electricity generation based largely on fossil fuels, with a positive environmental impact. Greater demand-side participation in the markets also provides price elasticity, which contributes to market efficiency and mitigates market power.

Q 36: IF THE FE COMPANIES OFFER DR AND EE INTO RPM BASE RESIDUAL AUCTIONS, DOES THIS RESULT IN DR AND EE RESOURCES THAT OTHERWISE WOULD NOT BE DEVELOPED?

A: No. If potential DR and EE resources are not offered into an RPM base residual auction, then they can always be developed at a later time, and capacity credit can be obtained by offering them into any of the three RPM incremental auctions that will be held for the same delivery year.

Q 37: WHAT BENEFITS DID THE FE COMPANIES CLAIM WOULD RESULT IF THEY WERE TO OFFER INCREMENTAL DR AND EE INTO THE RECENT RPM AUCTION?

A: The Stipulation (p. 2) noted that offering such resources "may in turn increase low-cost capacity supply in that auction." In his testimony, witness Ridmann described the ability to offer these resources into the RPM auction as a "qualitative" (as opposed to quantitative) benefit (p. 15) and went no further than to suggest (p. 19) that "[b]idding in such capacity should have a mitigating effect on the capacity auction prices, which would be favorable to customers."

In his Supplemental Testimony at p. 4, witness Ridmann provided an estimate of the RPM revenue that could be earned by EE resources the FE Companies may have offered into the RPM auction, and noted the potential benefits from a change in the RPM price, but he did not estimate the potential price impact of the EE resources.

Q 38: PLEASE DESCRIBE WITNESS RIDMANN'S ESTIMATE OF THE REVENUE THAT COULD BE EARNED BY EE RESOURCES OFFERED INTO THE RPM AUCTION.

A: Witness Ridmann described (p. 4) that if 50 MW of EE resources clears and the RPM price is $125.99/MW-day, the resulting annual RPM revenue would be $2.3 million (which is 50 MW x $125.99/MW-day x 365 days). He stated that if the RPM price is higher or lower the revenue would be higher or lower, and that this

revenue offsets the energy efficiency charges customers are otherwise obligated to pay under Rider DSE1. Because the clearing price for the ATSI zone for Annual resources was $357.00/MW-day[19], the RPM revenue would be $6.5 million.

Q 39: PLEASE DESCRIBE WITNESS RIDMANN'S DISCUSSION OF THE POTENTIAL IMPACT ON RPM PRICE OF THE EE RESOURCES.

A: Witness Ridmann provided no estimate of the impact of the EE resources on RPM clearing prices. He stated that "for every $10 per MW-day" of RPM price reduction, the Companies' non-shopping customers save $9.2 million annually; but the $10 is not an estimate or prediction. Witness Ridmann stated that this "guidance" is premised on, among other assumptions, the assumption that the resources displace more expensive resources that otherwise would have set a higher auction clearing price.

Q 40: HOW MUCH ENERGY EFFICIENCY WAS OFFERED AND CLEARED IN THE RPM BASE RESIDUAL AUCTION?

A: In the ATSI zone, 48.1 MW of EE resources were offered, and 44.9 MW cleared.[20]

[19] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012, p. 1. The price for annual resources is applicable.

[20] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012, p. 11 Table 3C.

Q 41: DID THE EE RESOURCES HAVE A MITIGATING EFFECT ON CAPACITY PRICES FOR THE ATSI ZONE, AS WITNESS RIDMANN SUGGESTS?

A: The EE resources may have had a mitigating effect, however, this cannot be determined from the auction results, and the available information suggest that the impact, if any, may have been very small. Under most circumstances, small increments of supply lower the RPM clearing price because both the administrative capacity demand curve and the supply curve are rather "steep" at the point of clearing (meaning, a small change in quantity corresponds to a relatively large change in price).

However, the supply curves also have horizontal or "flat" segments (where the price is unchanged over a certain range of quantity). For instance, large resources offered at a single price result in a flat segment of the supply curve. When RPM clears on a flat segment of the supply curve, a small increment of low-cost resource (such as the EE resources offered by the FE Companies) may have no impact on the clearing price, as it shifts the supply curve, but the same flat segment of the supply curve stills sets the same clearing price.

Under the particular circumstances of the ATSI zone in this RPM auction, it is quite possible that the clearing was on a flat segment of the supply curve. Existing coal plants may have been offered at high prices, reflecting the cost of

additional investments needed for environmental compliance, resulting in large flat segments of the supply curve at prices near the zone's clearing prices.

If the zone cleared on a flat segment of the supply curve, a small increment of low-cost EE resource would have had no impact on the clearing price. The incremental of low-cost supply would simply shift the supply curve to the right a bit, but the clearing price would still be the offer price of the resource creating the flat segment of the supply curve.

The auction results provided by PJM do not include sufficient information to determine whether or not the ATSI zone cleared on a flat segment of the supply curve. Therefore, whether or not a small incremental of EE or other supply had an impact on the RPM clearing price for the ATSI zone cannot be determined from the public data.

Q 42: DOES OFFERING INCREMENTAL DR AND EE INTO THE RPM BASE RESIDUAL AUCTION ALSO CONTRIBUTE TO RESOURCE ADEQUACY?

DR and EE resources contribute to resource adequacy. However, this benefit is available whether or not the resources are offered and cleared in base residual auctions. Potential DR and EE resources can be developed anytime between now and shortly before the start of the delivery year, and, if needed, still contribute to resource adequacy for 2015/2016.

Q 43: IF THE FE COMPANIES DID NOT OFFER SOME OR ALL OF THE POTENTIAL DR AND EE RESOURCES INTO THE UPCOMING RPM AUCTION, DOES THAT MEAN THESE RESOURCES DID NOT PARTICIPATE IN THE AUCTION?

A: No. Some of the resources that the FE Companies could potentially have offered may have participated in the auction either directly or through third parties such as Curtailment Service Providers. PJM reports that 1,763.7 MW of demand resources cleared in the ATSI zone in the auction, an increase of 808 MW over the quantity cleared in the prior base residual auction.[21] This suggests that some of the demand resources the FE Companies could have offered may have participated in the auction in another manner.

Q 44: IS IT RISKY FOR THE FE COMPANIES TO OFFER DR AND EE INTO THE RPM BASE RESIDUAL AUCTIONS?

A: No. There is little risk in this. In a related proceeding, the FE Companies claimed there were "significant risks" surrounding offers of DR and EE into the upcoming auction, and that they would not offer any DR and EE into the auction "absent a Commission Entry insulating the Companies from economic harm."[22] The expressed concern was primarily that the FE Companies might not be able to

[21] PJM, *2015/2016 RPM Base Residual Auction Results*, May 18, 2012, p. 8, Table 3A.

[22] *Report of the Ohio Edison Company, The Cleveland Electric Illuminating Company and the Toledo Edison Company* ("FE Companies' Report"), Case No. 12-814-EL-UNC, March 29, 2012, p. 2.

ultimately deliver all of the resources that might clear in the auction, potentially exposing them to penalties.

However, the FE Companies' Report made it apparent that the FE Companies were unaware that PJM holds three "incremental auctions" for each delivery year to allow market participants to adjust their capacity commitments if needed. The FE Companies' Report noted the incremental auctions, but stated that they were held "to true up or adjust the amount of capacity procured in a given BRA against changes in load or resources," which is only a secondary purpose of these auctions.

Because prices in RPM incremental auctions are consistently lower than in base residual auctions[23] (and this situation should only become more pronounced as a result of a recent change to the RPM rules[24]), should the FE Companies have a need to acquire replacement resources for some portion of their cleared EE, such resources likely can be acquired in any of the incremental auctions at a lower price than the base residual auction clearing price. Clearing the resources in the base residual auction, and then replacing the commitments at a lower price in an

[23] See, for instance, The Brattle Group, *Second Performance Assessment of PJM's Reliability Pricing Model*, August 2011, p. 25 Figure 7, available at http://www.pjm.com/documents/~/media/committees-groups/committees/mrc/20110818/20110826-brattle-report-second-performance-assessment-of-pjm-reliability-pricing-model.ashx.

[24] Under recent changes to the PJM Tariff, the Short Term Resource Procurement Target is no longer deducted from the Minimum Annual and Minimum Extended Resource Requirements, increasing the demand for these products in the base residual auctions.

incremental auction, results in a net profit. Consequently, there is little risk to the FE Companies in offering these resources, and should the Commission seek ways to insulate the FE Companies from this risk, transferring the net cost or benefit of the DR and EE sales to consumers would be a reasonable approach likely to benefit consumers.

Q 45: TO THE EXTENT SOME POTENTIAL DR AND EE RESOURCES WERE NOT OFFERED INTO THE RPM BASE RESIDUAL AUCTION, OR FAILED TO CLEAR, AND INSTEAD WILL BE OFFERED AND CLEARED THROUGH INCREMENTAL AUCTIONS, ARE THE CONSUMER BENEFITS COMPARABLE?

A: No. The potential benefits from offering the resources into incremental auctions are much less. Clearing these resources through the base residual auction results in the clearing prices in that auction more accurately reflecting the anticipated supply and demand for the delivery year, thus contributing to market efficiency while moderating prices. In RPM BRAs, held three years before the start of each delivery year, capacity supply is generally understated because some of the resources that will be available for the delivery year are not in a position to offer into the auction, while other resources may be economically withheld. As a result, RPM BRAs tend to set excessive prices that overstate the need for capacity.

A lower clearing price in the BRA benefits consumers because this is the price paid to all resources clearing in the auction, representing well over 90% of supply. By contrast, clearing the DR and EE resources in an incremental auction has little or no impact on the ultimate cost of capacity to consumers, because most transactions in incremental auctions are among market participants adjusting their commitments from the base residual auction. Only if PJM's load forecast changes and it seeks to adjust its capacity commitment through an incremental auction would offering the DR and EE in an incremental auction have an impact on the price of capacity for consumers. The impact on the price consumers pay would be very small, because these resources would affect the price paid for only the small quantity of resource PJM buys or sells in the incremental auction.

Q 46: PLEASE SUMMARIZE YOUR TESTIMONY WITH REGARD TO DR AND EE IN THE RPM BASE RESIDUAL AUCTION.

A: Offering and clearing DR and EE resources in the BRA generally benefits consumers by leading to a more efficient auction result and lower clearing price. However, under the circumstances of the ATSI zone there may have been little or no impact on price. In addition, some of the resources may have been able to participate in the auction without the involvement of the FE Companies.

These resources may also be offered and cleared in incremental auctions for the same delivery year, however, this results in reduced benefit compared to clearing the resources in base residual auctions. I also note that there is little risk to

clearing DR and EE resources in the base residual auction, because such commitments can be adjusted in incremental auctions where prices are generally much lower.

VI. CONCLUSIONS REGARDING RATEPAYER BENEFITS AND THE REQUEST FOR EXPEDITED APPROVAL

Q 47: THE COMMISSION USUALLY EVALUATES STIPULATIONS APPLYING A THREE-PRONG TEST, OF WHICH ONE PRONG IS THAT THE SETTLEMENT AS A PACKAGE MUST BENEFIT RATEPAYERS AND THE PUBLIC INTEREST. WHAT IS YOUR CONCLUSION REGARDING WHETHER THE STIPULATION BENEFITS RATEPAYERS AND THE PUBLIC INTEREST?

A: It has not been demonstrated that the Stipulation (and specifically, the proposal to auction a three-year product) would benefit ratepayers. The forward curve has been trending downward and may move up or down over the coming months and years; this cannot be predicted. However, due to the heightened uncertainty and risk for potential suppliers to the ATSI zone at this time, going to a three-year product to attempt to "lock in" current prices may result in consumers paying higher prices and does not appear to be in the interest of consumers. Furthermore, if these circumstances lead many potential suppliers to bid higher prices into the upcoming auctions, the heightened uncertainty will raise the auction prices and the cost to consumers, and it will also tend to benefit the FE Companies' affiliate

FES that owns generation in the ATSI zone. The impact of uncertainty and risk on the cost to consumers would be exacerbated by the FE Companies' proposal to change to a three-year product.

Q 48: PLEASE STATE YOUR CONCLUSION AND RECOMMENDATION REGARDING THE COMPANIES' REQUEST FOR AN EXPEDITED PROCESS IN THIS CASE.

A: The expedited process was requested to accommodate changes to the auctions to attempt to lock in current prices for a longer period. I disagree that this change would benefit consumers, and, therefore, I see no compelling reason to follow an expedited process in this proceeding.

Q 49: DOES THIS COMPLETE YOUR TESTIMONY?

A: Yes it does. However, I understand that I may be asked to supplement my testimony in the event that the FE Companies, Commission Staff or any Signatory Party submits additional testimony, or additional relevant information otherwise becomes available.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of James F. Wilson* was served electronically to the persons listed below on this 21st day of May, 2012.

/s/ Larry S. Sauer
Larry S. Sauer
Assistant Consumers' Counsel

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Exhibit JFW-1

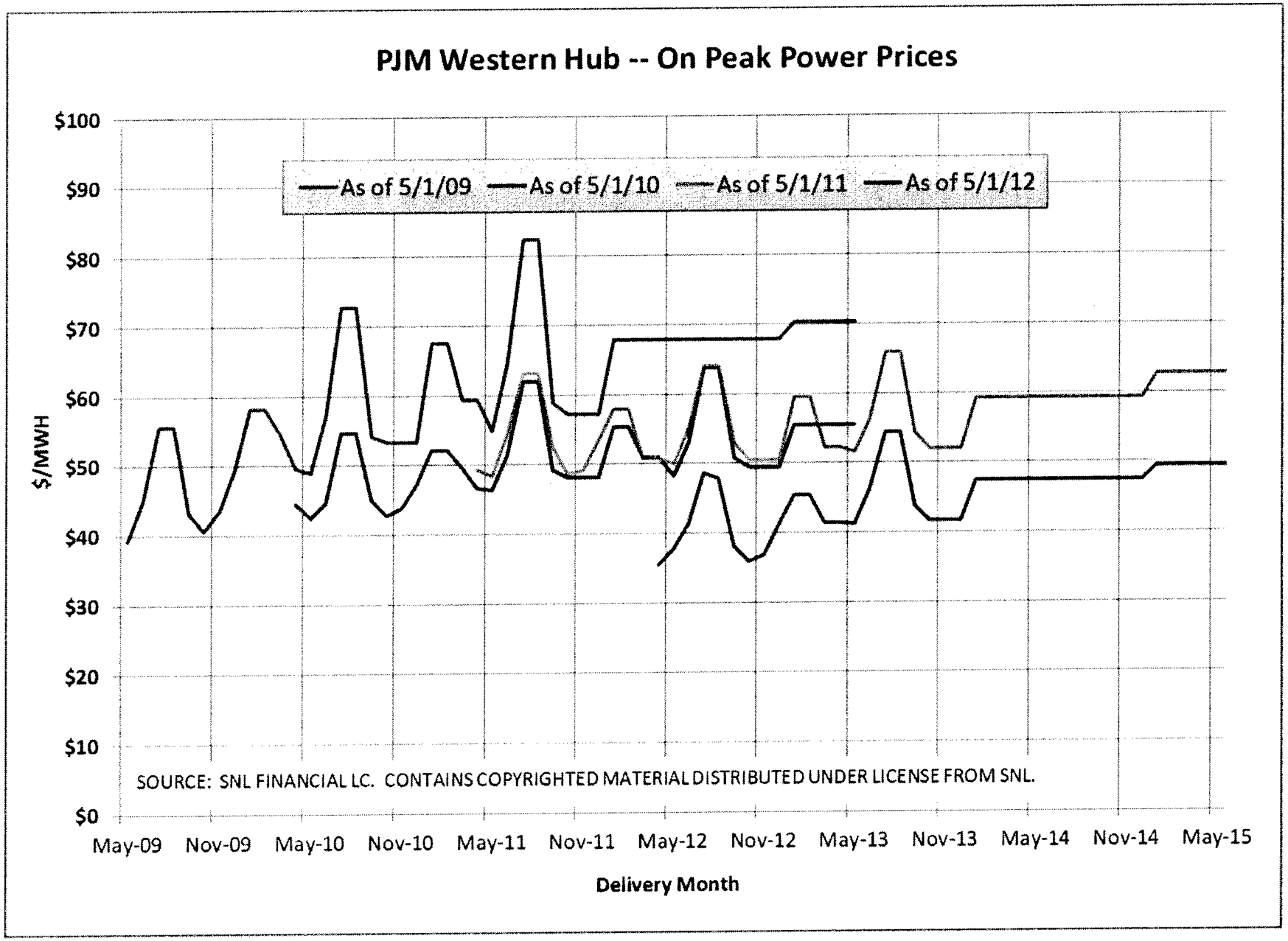
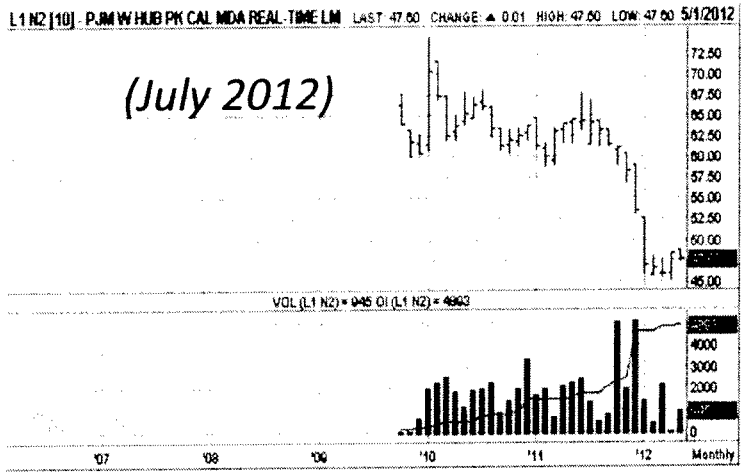
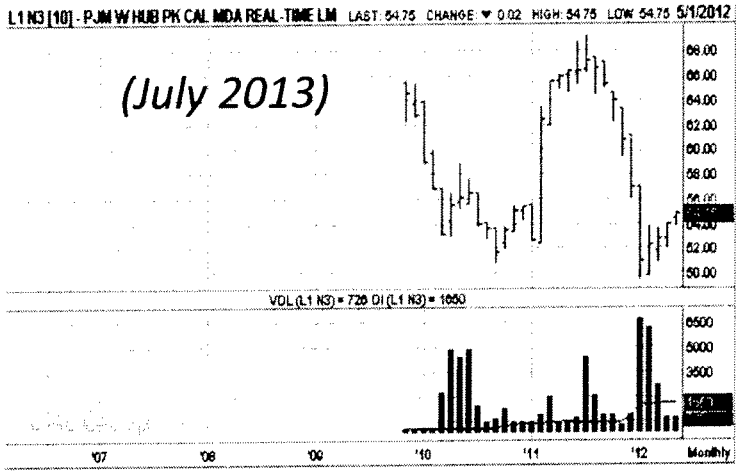
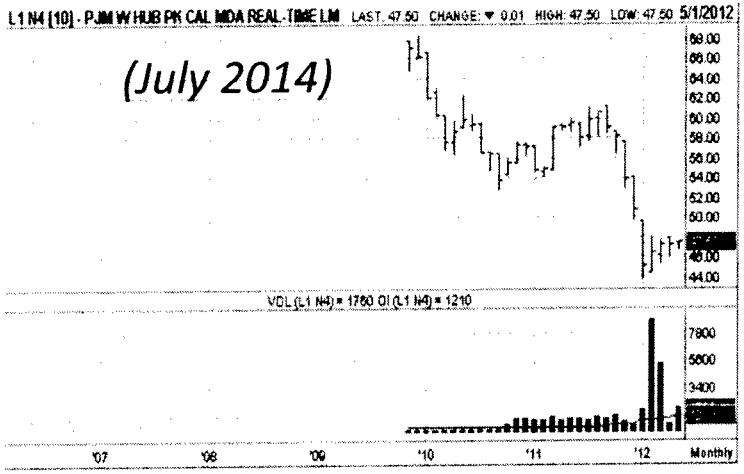


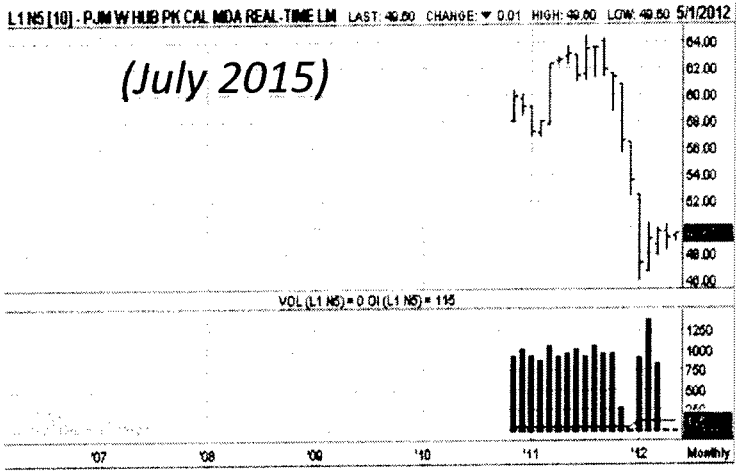
Exhibit JFW-2

PJM Western Hub Peak Calendar Month LMP Swap Futures
Price, Volume and Open Interest -- July 2012, 2013, 2014 and 2015









Source: CME Group, www.cmegroup.com

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SUMMARY

James F. Wilson has over 25 years of consulting experience, primarily in the electric power and natural gas industries. Many of his assignments have pertained to the economic and policy issues arising from the interplay of competition and regulation in these industries, including restructuring policies, market design, market analysis and market power. Other recent engagements have involved resource adequacy and capacity markets, contract litigation and damages, forecasting and market evaluation, pipeline rate cases and evaluating allegations of market manipulation. Mr. Wilson has been involved in electricity restructuring and wholesale market design for over twenty years in California, PJM, New England, Ontario, Russia and other regions. He also spent five years in Russia advising on the reform, restructuring and development of the Russian electricity and natural gas industries.

Mr. Wilson has submitted affidavits and testified in Federal Energy Regulatory Commission and state regulatory proceedings. His papers have appeared in the *Energy Journal*, *Electricity Journal*, *Public Utilities Fortnightly* and other publications, and he often presents at industry conferences.

Prior to founding Wilson Energy Economics, Mr. Wilson was a Principal at LECG, LLC. He has also worked for ICF Resources, Decision Focus Inc., and as an independent consultant.

EDUCATION

MS, Engineering-Economic Systems, Stanford University, 1982

BA, Mathematics, Oberlin College, 1977

RECENT ENGAGEMENTS

- Affidavit on the impact of a centralized capacity market on the potential benefits of participation in a Regional Transmission Organization (RTO)
- Participated in a panel teleseminar on resource adequacy policy and modeling.
- Affidavit on opt-out rules for centralized capacity markets.
- Affidavit on minimum offer price rules for RTO centralized capacity markets.
- Evaluated electric utility avoided cost in a tax dispute.
- Advised on pricing approaches for RTO backstop short-term capacity procurement.
- Affidavit evaluating the potential impact on reliability of demand response products limited in the number or duration of calls.
- Evaluated changing patterns of natural gas production and pipeline flows, developed approaches for pipeline tolls and cost recovery.
- Evaluated an electricity peak load forecasting methodology and forecast; evaluated regional transmission needs for resource adequacy.

- Participated on a panel teleseminar on natural gas price forecasting.
- Affidavit evaluating a shortage pricing mechanism and recommending changes.
- Testimony in support of proposed changes to a forward capacity market mechanism.
- Reviewed and critiqued an analysis of the economic impacts of restrictions on oil and gas development.
- Advised on the development of metrics for evaluating the performance of Regional Transmission Organizations and their markets.
- Prepared affidavit on the efficiency benefits of excess capacity sales in readjustment auctions for installed capacity.
- Prepared affidavit on the potential impacts of long lead time and multiple uncertainties on clearing prices in an auction for standard offer electric generation service.

EARLIER PROFESSIONAL EXPERIENCE

LECG, LCC, Washington, DC 1998–2009.
Principal

- Reviewed and commented on an analysis of the target installed capacity reserve margin for the Mid Atlantic region; recommended improvements to the analysis and assumptions.
- Evaluated an electric generating capacity mechanism and the price levels to support adequate capacity; recommended changes to improve efficiency.
- Analyzed and critiqued the methodology and assumptions used in preparation of a long run electricity peak load forecast.
- Evaluated results of an electric generating capacity incentive mechanism and critiqued the mechanism's design; prepared a detailed report. Evaluated the impacts of the mechanism's flaws on prices and costs and prepared testimony in support of a formal complaint.
- Analyzed impacts and potential damages of natural gas migration from a storage field.
- Evaluated allegations of manipulation of natural gas prices and assessed the potential impacts of natural gas trading strategies.
- Prepared affidavit evaluating a pipeline's application for market-based rates for interruptible transportation and the potential for market power.
- Prepared testimony on natural gas industry contracting practices and damages in a contract dispute.
- Prepared affidavits on design issues for an electric generating capacity mechanism for an eastern US regional transmission organization; participated in extensive settlement discussions.
- Prepared testimony on the appropriateness of zonal rates for a natural gas pipeline.
- Evaluated market power issues raised by a possible gas-electric merger.
- Prepared testimony on whether rates for a pipeline extension should be rolled-in or incremental under FERC policy.
- Prepared an expert report on damages in a natural gas contract dispute.
- Prepared testimony regarding the incentive impacts of a ratemaking method for natural gas pipelines.
- Prepared testimony evaluating natural gas procurement incentive mechanisms.
- Analyzed the need for and value of additional natural gas storage in the southwestern US.
- Evaluated market issues in the restructured Russian electric power market, including the need to introduce financial transmission rights, and policies for evaluating mergers.
- Affidavit on market conditions in western US natural gas markets and the potential for a new merchant gas storage facility to exercise market power.
- Testimony on the advantages of a system of firm, tradable natural gas transmission and storage rights, and the performance of a market structure based on such policies.
- Testimony on the potential benefits of new independent natural gas storage and policies for providing transmission access to storage users.

- Testimony on the causes of California natural gas price increases during 2000-2001 and the possible exercise of market power to raise natural gas prices at the California border.
- Advised a major US utility with regard to the Federal Energy Regulatory Commission (FERC) proposed Standard Market Design and its potential impacts on the company.
- Reviewed and critiqued draft legislation and detailed market rules for reforming the Russian electricity industry, for a major investor in the sector.
- Analyzed the causes of high prices in California wholesale electric markets during 2000 and developed recommendations, including alternatives for price mitigation. Testimony on price mitigation measures.
- Summarized and critiqued wholesale and retail restructuring and competition policies for electric power and natural gas in select US states, for a Pacific Rim government contemplating energy reforms.
- Presented testimony regarding divestiture of hydroelectric generation assets, potential market power issues, and mitigation approaches to the California Public Utilities Commission.
- Reviewed the reasonableness of an electric utility's wholesale power purchases and sales in a restructured power market during a period of high prices.
- Presented an expert report on failure to perform and liquidated damages in a natural gas contract dispute.
- Presented a workshop on Market Monitoring to a group of electric utilities in the process of forming an RTO.
- Authored a report on the screening approaches used by market monitors for assessing exercise of market power, material impacts of conduct, and workable competition.
- Developed recommendations for mitigating locational market power, as part of a package of congestion management reforms.
- Provided analysis in support of a transmission owner involved in a contract dispute with generators providing services related to local grid reliability.
- Authored a report on the role of regional transmission organizations in market monitoring.
- Prepared market power analyses in support of electric generators' applications to FERC for market-based rates for energy and ancillary services.
- Analyzed western electricity markets and the potential market power of a large producer under various asset acquisition or divestiture strategies.
- Testified before a state commission regarding the potential benefits of retail electric competition and issues that must be addressed to implement it.
- Advised a Canadian electric utility on restructuring issues, including: market design and trading arrangements; contractual approaches to mitigating market power; measures for ensuring adequate generating capacity.
- Prepared a market power analysis in support of an acquisition of generating capacity in the New England market.
- Advised a California utility regarding reform strategies for the California natural gas industry, addressing a broad range of market power issues and policy options for providing system balancing services.

ICF RESOURCES, INC., Fairfax, VA, 1997–1998.
Project Manager

- Reviewed, critiqued and submitted testimony on a New Jersey electric utility's restructuring proposal, as part of a management audit for the state regulatory commission.
- Assisted a group of US utilities in developing a proposal to form a regional Independent System Operator (ISO).
- Researched and reported on the emergence of Independent System Operators and their role in reliability, for the Department of Energy.

- Provided analytical support to the Secretary of Energy's Task Force on Electric System Reliability on various topics, including ISOs. Wrote white papers on the potential role of markets in ensuring reliability and on liability issues.
- Recommended near-term strategies for addressing the potential stranded costs of non-utility generator contracts for an eastern utility; analyzed and evaluated the potential benefits of various contract modifications, including buyout and buydown options; designed a reverse auction approach to stimulating competition in the renegotiation process.
- Designed an auction process for divestiture of a Northeastern electric utility's generation assets and entitlements (power purchase agreements).
- Participated in several projects involving analysis of regional power markets and valuation of existing or proposed generation assets.

IRIS MARKET ENVIRONMENT PROJECT, 1994–1996.
Project Director, Moscow, Russia

Established and led a policy analysis group advising the Russian Federal Energy Commission and Ministry of Economy on economic policies for the electric power, natural gas, oil pipeline, telecommunications, and rail transport industries (*the Program on Natural Monopolies,* a project of the IRIS Center of the University of Maryland Department of Economics, funded by USAID). Major activities and projects included:

- Advised on industry reforms and the establishment of federal regulatory institutions.
- Advised the Russian Federal Energy Commission on electricity restructuring, development of a competitive wholesale market for electric power, tariff improvements, and other issues of electric power and natural gas industry reform.
- Developed policy conditions for the IMF's $10 billion Extended Funding Facility.
- Performed industry diagnostic analyses with detailed policy recommendations for electric power (1994), natural gas, rail transport and telecommunications (1995), oil transport (1996).

Independent Consultant stationed in Moscow, Russia, 1991–1996

Projects for the WORLD BANK, 1992-1996:

- Bank Strategy for the Russian Electricity Sector. Developed a policy paper outlining current industry problems and necessary policies, and recommending World Bank strategy.
- Russian Electric Power Industry Restructuring. Participated in work to develop recommendations to the Russian Government on electric power industry restructuring.
- Russian Electric Power Sector Update. Led project to review developments in sector restructuring, regulation, demand, supply, tariffs, and investment.
- Russian Coal Industry Restructuring. Analyzed Russian and export coal markets and developed forecasts of future demand for Russian coal.
- World Bank/IEA Electricity Options Study for the G-7. Analyzed mid- and long-term electric power demand and efficiency prospects and developed forecasts.
- Russian Energy Pricing and Taxation. Developed recommendations for liberalizing energy markets, eliminating subsidies and restructuring tariffs for all energy resources.

Other consulting assignments in Russia, 1991–1994:

- Project leader for start-up phase of the joint Russian-American Electric Power Alternatives Study on power sector development and investment; also participated in a project on electric power restructuring.
- Advised the US Agency For International Development on the establishment of energy industry technical assistance programs in Russia.
- Advised on projects pertaining to Russian energy policy and the transition to a market economy in the energy industries, for the Institute For Energy Research of the Russian Academy of Sciences.

- Presented seminars on the structure, economics, planning, and regulation of the energy and electric power industries in the US, for various Russian clients.

DECISION FOCUS INC., Mountain View, CA, 1983–1992
Senior Associate, 1985-1992.

- For the Electric Power Research Institute, led projects to develop decision-analytic methodologies and models for evaluating long term fuel and electric power contracting and procurement strategies. Applied the methodologies and models in numerous case studies, and presented several workshops and training sessions on the approaches.
- Analyzed long-term and short-term natural gas supply decisions for a large California gas distribution company following gas industry unbundling and restructuring.
- Analyzed long term coal and rail alternatives for a midwest electric utility, including alternative coal supply regions, suppliers and contract structures; spot/contract mix; rail arrangements; power purchases; conversion to gas.
- Led project to evaluate bulk power purchase alternatives and strategies for a New Jersey electric utility. Developed model for analyzing power purchases.
- Performed a financial and economic analysis of a proposed hydroelectric project.
- For a natural gas pipeline company serving the Northeastern US, forecasted long-term natural gas supply and transportation volumes. Developed a forecasting system for staff use.
- Analyzed potential benefits of diversification of gas suppliers for a mid-continent gas pipeline company.
- Led project to evaluate and make recommendations on uranium contracting strategies, including long-term contract purchases, spot purchases, and stockpiling actions, for an electric utility.
- Analyzed telecommunications services markets under deregulation, developed and implemented a pricing strategy model. Evaluated potential responses of residential and business customers to changes in the client's and competitors' telecommunications services and prices.
- Analyzed coal contract terms and supplier diversification strategies for an eastern electric utility.
- Analyzed long-term natural gas supply strategies and spot purchasing strategies for a California natural gas distribution company.
- Analyzed oil and natural gas contracting strategies for a California electric utility. Evaluated standby supply options for low-sulfur fuel oil.

TESTIMONY AND AFFIDAVITS

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In the Matter of the Reliability Pricing Model and the 2013/2014 Delivery Year Base Residual Auction Results, Maryland Public Service Commission Administrative Docket PC22, Comments and Responses to Questions On Behalf of Southern Maryland Electric Cooperative, October 15, 2010.

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ISO New England, Inc. and New England Power Pool, Federal Energy Regulatory Commission Docket No. ER10-787-000 on Forward Capacity Market Revisions: Direct Testimony On Behalf Of The Connecticut Department of Public Utility Control, March 30, 2010; Direct Testimony in Support of First Brief of the Joint Filing Supporters, July 1, 2010; Supplemental Testimony in Support of Second Brief of the Joint Filing Supporters, September 1, 2010.

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Comments on Policies to Encourage Natural Gas Infrastructure, and *Supplemental Comments on Market-Based Rates Policy For New Natural Gas Storage,* State of the Natural Gas Industry Conference, Federal Energy Regulatory Commission Docket No. AD05-14, October 12 and 26, 2005.

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PROFESSIONAL ASSOCIATIONS

United States Association for Energy Economics

Natural Gas Roundtable

Energy Bar Association

March 2012

Summary: Testimony Direct Testimony of James F. Wilson on Behalf of the Office of the Ohio Consumers' Counsel electronically filed by Patti Mallarnee on behalf of Sauer, Larry S.