

**BEFORE THE STATE OF NEW JERSEY
OFFICE OF ADMINISTRATIVE LAW
BOARD OF PUBLIC UTILITIES**

**I/M/O THE JOINT PETITION OF PUBLIC)
SERVICE ELECTRIC AND GAS COMPANY) BPU DKT. NO. EM05020106
AND EXELON CORPORATION FOR) OAL DKT. NO.PUC-1874-05
APPROVAL OF A CHANGE IN CONTROL)
OF PUBLIC SERVICE ELECTRIC AND GAS)
COMPANY AND RELATED AUTHORIZATIONS)**

**SURREBUTTAL TESTIMONY OF BRUCE BIEWALD, ROBERT FAGAN AND
DAVID SCHLISSEL ON BEHALF OF THE
NEW JERSEY DIVISION OF THE RATEPAYER ADVOCATE**

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Biewald-Fagan-Schlissel Surrebuttal Testimony

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1 **I. INTRODUCTION**

2 **Q. Mr. Biewald, please state your name, position and business address.**

3 A. My name is Bruce E. Biewald. I am the President of Synapse Energy Economics,
4 Inc., 22 Pearl Street, Cambridge, MA 02139.

5 **Q. Mr. Fagan, please state your name, position and business address.**

6 A. My name is Robert M. Fagan. I am a Senior Associate at Synapse Energy
7 Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

8 **Q. Mr. Schlissel, please state your name, position and business address.**

9 A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy
10 Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

11 **Q. On whose behalf are you testifying in this case?**

12 A. We are testifying on behalf of the New Jersey Division of the Ratepayer Advocate
13 (“Ratepayer Advocate”).

14 **Q. Have you previously submitted testimony in this proceeding?**

15 A. Yes. We submitted Direct Testimony on November 14, 2005.

16 **Q. What is the purpose of this Surrebuttal Testimony?**

17 A. The purpose of this Surrebuttal Testimony is to respond to comments made in the
18 Rebuttal Testimony submitted on behalf of the Petitioners by Rodney Frame,
19 Gary Sorenson and William Hogan.

20 **Q. Please summarize the conclusions of this Surrebuttal Testimony.**

21 A. None of the claims or comments made by the Petitioners’ rebuttal witnesses
22 causes us to change the conclusions presented in our Direct Testimony.

1 **II. MR. FRAME’S MODELING UNDERSTATES THE LEVEL OF**
2 **CONCENTRATION IN THE PJM EAST ENERGY MARKET**
3

4 **Q. Does Mr. Frame’s “apples to apples” comparison demonstrate that he has**
5 **accurately modeled the pre-merger levels of concentration in the PJM East**
6 **Energy Market?¹**

7 A. Not at all. At most, Mr. Frame’s “apples to apples” comparison shows that the
8 results of his PJM East Capacity Market analysis are comparable to the lower end
9 of the PJM MMU’s range of market concentrations in the PJM East region.

10 Moreover, as our Direct Testimony explained, Mr. Frame’s PJM East Capacity
11 Market analysis, Exhibit RF-8 (revised), did not accurately reflect the pre-merger
12 levels of concentration for a number of reasons, the most significant of which is
13 that he unrealistically and unreasonably assigns none of the 7,300 MW of
14 transmission import capability across the PJM Eastern Interface to any current
15 market participants, including Exelon or PSEG.² Thus, there is no significance to
16 the fact that Mr. Frame’s conclusions are comparable to the results of a PJM
17 MMU analysis which makes a similar omission. What is far more significant is
18 that Mr. Frame’s pre-merger HHI results would be higher if he properly assigned
19 the 7,300 MW of transmission import capability across the PJM Eastern Interface
20 to current market participants, including Exelon and PSEG. As we have
21 demonstrated in Table 2 on page 36 and in Exhibits BFS-4 and BFS-5 of our
22 Direct Testimony, Exelon and PSEG, in fact, do bring, and can be expected to
23 bring, substantial amounts of power into PJM East over this Interface. For this
24 reason, Mr. Frame’s “apples to apples” comparison does not prove that he has
25 accurately modeled the pre-merger levels of concentration in the PJM East
26 Energy Market.

¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 31, line 8, to page 32, line 6.

² Biewald-Fagan-Schlissel Direct Testimony, at page 51, line 17, to page 53, line 18.

1

2 **III. MR. FRAME MISCHARACTERIZES THE CONCLUSIONS AND**
3 **FINDINGS OF THE PJM MMU’S MERGER ANALYSIS REPORTS**

4 **Q. Does Mr. Frame accurately characterize the conclusions and findings of the**
5 **PJM Market Monitoring Unit’s October 2005 Merger Analysis Report?**

6 A. No. Mr. Frame claims that the PJM Market Monitoring Unit’s (“MMU”) October
7 2005 Merger Analysis verifies his conclusions about the competitive effects of the
8 merger.³ However, Mr. Frame’s characterization of the MMU’s October 14
9 analysis is highly misleading. In fact, the MMU repeatedly conditions its
10 conclusions about the merger’s potential impact on competition with critical and
11 strict assumptions. For example:

- 12 ▪ Consistent with its previous conclusion, the MMU states that “it is not
13 possible to determine whether divestiture will in fact mitigate the issues
14 without knowing the exact units and their distribution factor impacts on
15 the identified constraints.”⁴ The MMU also qualifies that “a supplemental
16 analysis must be performed once a definitive declaration of divested assets
17 has been developed.”⁵
- 18 ▪ The MMU repeatedly asserts that the identity of the purchasers of the
19 divested units is necessary for evaluating the adequacy of the proposed
20 mitigation for the energy markets.⁶ In the October 2005 update, the MMU
21 qualified that its conclusion about the adequacy of the proposed energy
22 market mitigation “is based on the strong assumption that the sale of
23 divested units is made to a company that currently has no position in the
24 identified locational energy markets.”⁷ This report goes on to say,
25 “In fact, the conclusions about the required level of divestiture in the
26 Energy Market depend on the nature of the companies purchasing the
27 divested assets. The initial analysis assumes that the purchasing company

³ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 2, line 15.

⁴ PJM MMU “Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at page 3. See also pages 15, 20, 23, 28-29, 30 and 56.

⁵ Ibid., at pages 20, 23, 29, 30, and 57; and PJM MMU “Exelon/PSEG Merger Analysis,” dated May 24, 2005, at pages 19, 21, 25 and 26.

⁶ PJM MMU “Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at pages 3, 4, 15, 20, 21, 23, 28, 29, 30, 56-57.

⁷ Ibid., at page 3.

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1 has no capacity ownership in the relevant market. If the divested assets are
2 sold to a company with a market share of from 16 percent to 35 percent,
3 the proposed divestiture results in HHI levels that exceed the levels
4 reached when the divested assets are sold to a company with a market
5 share closer to five percent. In some cases the results after divestiture are
6 worse than the results without divestiture. Conclusions about the required
7 level of divestiture in the locational energy markets also depend on the
8 nature of the companies purchasing the divested assets.”⁸

9 ▪ The MMU did not attempt to evaluate the virtual divestiture portion of the
10 divestiture. It treated divestitures in an undifferentiated manner in its
11 analysis and qualifies that “to the extent that virtual divestiture results in
12 different incentives than does actual divestiture, the conclusions drawn in
13 this analysis would need to be modified in a consistent manner.”⁹

14 Aside from the fact that the Applicants’ proposed “virtual divestiture” is unproven
15 and unprecedented, our Direct Testimony lays out the significant ways that virtual
16 divestiture differs from actual divestiture, such that virtual divestiture has little or
17 no value as a mitigation measure.

18 In each of its Reports, the MMU finds that the proposed merger would
19 significantly increase concentration in the Energy, Capacity and Regulation
20 markets and, therefore, would likely create potential adverse competitive effects,
21 absent mitigation.¹⁰ Given that it did not evaluate the effects of virtual divestiture
22 as mitigation, and that the failure of any of the previous three assumptions to hold
23 would likely invalidate a finding that the merger would not have adverse
24 competitive effects, the MMU’s conclusions clearly do not constitute an
25 endorsement.

26 **Q. Does Mr. Frame misrepresent the MMU reports in any other ways?**

27 A. Yes. Mr. Frame implies that the Applicants’ proposed mitigation is identical to
28 the MMU’s definition of appropriate mitigation. For example, he testifies that:

⁸ Ibid., at page 3.

⁹ Ibid., at page 5.

¹⁰ Ibid., at page 3. See also pages 15, 19, 22, 28, 29, 42, and 56.

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1 The overall conclusions of the PJM MMU’s reports are
2 substantially the same as my own, namely that the merger does not
3 raise any competitive issues that cannot be addressed by the
4 *proposed* mitigation. Thus, page 5 of the October 14, 2005 PJM
5 MMU report states: “It appears that *appropriate* mitigation, if
6 structured in ways to address the issues identified in this report,
7 can resolve the concerns about competitive impacts.”¹¹ (Emphasis
8 added)

9 The merger analyses provided by the PJM MMU use a different
10 analytical approach than I used, and different data sets, but
11 nevertheless reach an overall conclusion that is substantially the
12 same as mine. That overall conclusion is that, with an appropriate
13 mitigation package, *within the parameters already accepted by the*
14 *Joint Petitioners*, the merger will not create market power
15 concerns.¹² (Emphasis added)

16 The PJM MMU found that the merger will have no adverse
17 competitive effects so long as *the merging parties’ mitigation*
18 *proposal* is properly implemented.”¹³ (Emphasis added)

19 Crucially, however, the MMU states that *appropriate* mitigation, which may or
20 may not be synonymous with the Applicants’ proposed mitigation, can resolve the
21 concerns about competitive impacts.¹⁴ As discussed by the MMU, “appropriate
22 mitigation” could take a number of forms, such as an agreement by the merged
23 company to offer units only at marginal cost as defined in the offer capping
24 rules.¹⁵ The MMU does not put conditions on the effectiveness of these
25 alternative mitigation plans, suggesting that it has a much higher degree of
26 confidence in these measures. In contrast, the MMU’s many caveats on the
27 adequacy of the Petitioners’ proposed mitigation, which has left so many
28 variables open as to make analysis impossible, implies that the Applicants have
29 yet to put forth “appropriate mitigation” in this filing. For reasons discussed

¹¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 11, lines 5-10.

¹² Ibid., at page 6, lines 12–17.

¹³ Ibid., at page 2, lines 15-17.

¹⁴ PJM MMU “Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at page 5.

¹⁵ Ibid., at pages 19, 22, 28, 30, and 56.

1 herein and in our Direct Testimony, we believe that the Applicants’ proposed
2 mitigation falls quite short of being “adequate.”

3 **Q. What have the Petitioners proposed for mitigation in the capacity market**
4 **pending implementation of the new capacity market paradigm proposed by**
5 **PJM before the FERC?**

6 A. “On an interim basis, the merging parties have proposed that the merged firm will
7 offer its entire “net long” position into PJM’s daily capacity market at a price of
8 zero. Thus, it will be a “price taker” with no ability or incentive to influence the
9 market price.”¹⁶

10 **Q. If the New Jersey Board of Public Utilities (“the Board”) approves the**
11 **merger, is it likely that the interim capacity market mitigation would go into**
12 **effect?**

13 A. Yes. The interim mitigation would be necessary until the new capacity market
14 structure is approved. PJM wants to implement the new Reliability Pricing Model
15 (“RPM”) beginning on June 1, 2006. However, as discussed in our Direct
16 Testimony and acknowledged by Mr. Frame,¹⁷ an implementation date
17 approximately six months from now seems unlikely. Should FERC grant a fully
18 contested proceeding or require substantial revisions to the proposed RPM,
19 substantial delays could result. Even after FERC issues an Order, implementation
20 of the new capacity market designs, features, and rules could be delayed for a
21 significantly longer period.

¹⁶ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 48, lines 12-15.

¹⁷ “The future capacity paradigm for PJM is not now known. PJM has made its RPM filing with FERC, but it is not now known when or even if FERC will approve it or, if approved, precisely what will be approved.” Rebuttal Testimony of Rodney (Frame, Exhibit JP-24, rebut at page 48, lines 10-12.)

1 **Q. How does Mr. Frame characterize the MMU’s conclusions about the**
2 **effectiveness of the proposed interim capacity market mitigation?**

3 A. He states that “the merging parties’ interim capacity market mitigation proposal,
4 which has been *endorsed* by the PJM MMU and which involves bidding the
5 merged firm’s net unforced capacity (“UCAP”) position into PJM’s daily UCAP
6 market at a price of zero, eliminates any merger-related competitive concerns in
7 the near term.”¹⁸ Likewise, he claims that the “PJM MMU agrees that the merging
8 party’s interim capacity market mitigation proposal is likely to be effective.”¹⁹

9 **Q. Has the MMU in fact “endorsed” the companies’ interim capacity market**
10 **mitigation proposal?**

11 A. No. Mr. Frame misrepresents the MMU’s conclusions about the interim capacity
12 market mitigation proposal. Critically, the MMU conditions its conclusions on
13 mitigation that is “properly structured”²⁰ and on an “appropriate” definition of the
14 capacity for sale.²¹ In the June 2005 supplement to its original merger analysis,
15 the MMU sheds light on how the companies’ proposed mitigation may fall short
16 of being “properly structured”:

17 The Applicants in fact propose to offer only their “net” capacity at
18 zero cost and only until such time that PJM implements locational
19 capacity markets for various submarkets within PJM. The
20 Applicants then intend to propose their own mitigation plan but
21 only following approval of their merger application. It is thus
22 impossible to evaluate whether the mitigation plan, as proposed,
23 would resolve the market power issues created by the merger.”²²
24 (PJM MMU, Supplemental Report June 16, 2005)

¹⁸ Ibid., at page 7, lines 12-16. Emphasis added.

¹⁹ Ibid., at page 57, lines 22-23.

²⁰ For example, PJM MMU “Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at page 44.

²¹ Ibid., at page 4.

²² PJM MMU “Exelon/PSEG Merger Analysis, Supplemental Report”, dated June 16, 2005, at page 5.

1 **Q. Has the MMU changed its position on the effectiveness of the proposed**
2 **interim capacity market mitigation?**

3 A. No. The PJM MMU Merger Analyses do not reflect any material shift in
4 conclusions. The MMU analyses (May 2005, June 2005 and October 2005)
5 qualify that its conclusions about the adequacy of the interim mitigation proposal
6 only apply “if properly structured.”²³

7 **Q. Have the Companies modified their capacity market mitigation proposal**
8 **based on the MMU’s finding that it does not have sufficient data to evaluate**
9 **the effectiveness of the proposed mitigation plan?**

10 A. No. Mr. Frame claims that there are no important capacity market issues with the
11 merger that should be considered at this time, and that “it is neither necessary nor
12 appropriate to do so until the details of the new capacity paradigm are known.”²⁴

13 **Q. Have you noted other instances where Mr. Frame’s description of the MMU**
14 **Analyses is misleading?**

15 A. Yes. The MMU states that its conclusions related to the markets defined by the
16 Eastern Interface and by the Keeney transformer, which are the locational markets
17 most relevant to the BGS auction, apply to the impact on the BGS auction.²⁵
18 According to the October report, the MMU’s analysis of the market formed by the
19 Eastern Interface finds that a screen failure would result if an existing company
20 with a market share of only 6% purchases the divested capacity.²⁶ Its results about
21 the markets formed by these constraints do not inspire confidence in the proposed
22 mitigation. Despite this, Mr. Frame suggests that the MMU found no issues with
23 the proposed merger’s impacts on the BGS auction:

²³ PJM MMU “Exelon/PSEG Merger Analysis,” dated May 24, 2005, at page 36; and PJM MMU
“Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at page 44.

²⁴ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 48, lines 20-21.

²⁵ PJM MMU “Exelon/PSEG Merger Analysis, Part Two,” dated October 14, 2005, at pages 9 and
19.

²⁶ Ibid., at page 20.

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1 [The PJM MMU and Frame] analyses demonstrate that the merger,
2 with the proposed mitigation appropriately implemented, will not
3 adversely affect competition. *As explained in both the PJM MMU*
4 *report and in my testimony, this conclusion applies as well to the*
5 *BGS auction and to PJM’s proposed Reliability Pricing Model*
6 *(“RPM”).²⁷ [Emphasis added]*

7 **IV. FLAWS AND WEAKNESSES IN MR. FRAME’S HHI MODELING**

8 **Q. Mr. Frame has made a number of claims in response to your criticisms of his**
9 **HHI modeling. Do any of these claims cause you to change your ultimate**
10 **conclusion that the results of his market power modeling are rendered**
11 **unrealistic by a number of serious flaws that cause him to understate the**
12 **post-merger and post-mitigation levels of concentration in the PJM East**
13 **Energy Market?**

14 A. No.

15 **Q. Is your criticism that Mr. Frame inappropriately assumed that all generating**
16 **capacity in the study area would be available to serve the market “unfounded**
17 **and incorrect,” as Mr. Frame has claimed?²⁸**

18 A. Not at all. Mr. Frame’s PJM East Energy Market Economic Capacity analyses all
19 assume that all of the capacity inside PJM and that can be imported into PJM
20 from outside would be available to serve load in PJM East. As we discussed in
21 our November 14, 2005 Testimony, this is an unrealistic assumption. In the real
22 world, much of the capacity that Mr. Frame assumes would be available to
23 compete to serve load in PJM East might not be available because of planned or
24 forced outages or because it will serve load outside PJM East.²⁹

²⁷ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 2, line 23 to page 3, line 4.

²⁸ Ibid., at page 15, line 3, to page 16, line 17.

²⁹ See the Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 35, lines 12-18.

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1 **Q. Do Mr. Frame’s adjustments for load obligations in his Available Economic**
2 **Capacity analyses fully compensate for his failure to reflect in his Economic**
3 **Capacity analyses the likely destination markets for the capacity located**
4 **outside of PJM East?**³⁰

5 A. No. As Mr. Frame acknowledges, the Petitioners’ mitigation plan is based on the
6 results of his Economic Capacity analyses.³¹ For this reason, those analyses need
7 to be as realistic as possible.

8 Moreover, Mr. Frame’s reliance here on his Available Economic Capacity
9 analyses conflicts with the market power testimony filed at the FERC by Dr.
10 William Hieronymus on behalf of the Petitioners in which Dr. Hieronymus
11 concluded that:

12 In any event, Available Economic Capacity is a questionable
13 metric for defining market share in PJM. All capacity must be bid
14 into the PJM market and selected to run before it can generate.
15 Hence, irrespective of retail load commitments, all of a supplier’s
16 Economic Capacity is relevant to setting market prices. Thus,
17 while I have presented an Available Economic Capacity analysis
18 as required by the Commission’s regulations, I have focused
19 primarily on the Economic Capacity analysis in determining the
20 effects of the merger on competition and in assessing the efficacy
21 of mitigation.³²

22 Dr. Hieronymus also noted that developing a comprehensive Available Economic
23 Capacity analysis is quite difficult, given the status of retail access in PJM:

24 Utilities in New Jersey, Maryland, Pennsylvania and elsewhere in
25 the mid-Atlantic generally still have [Provider of Last Resort]
26 responsibilities, but tend to serve load through [Power Purchase
27 Agreements] or, as in the case of New Jersey, through the BGS
28 auction that effectively results in the sale of load obligations to

³⁰ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 15, line 1, through page 16, line 7.

³¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 15, lines 20-22.

³² Prepared Direct Testimony and Exhibits of William H. Hieronymus on behalf of Exelon Corporation, Petitioners’ Exhibit No. J-1, FERC Docket No. EC05-43-000, at page 51, lines 20-26.

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1 third-parties. Retail access also exists in other PJM states (e.g.,
2 Ohio) and in states from which power is exported to PJM. The real
3 analytic difficulty arises because there are no publicly-available
4 data identifying which generation is committed to serving load.
5 The BGS auction, for example, reflects that the winning bidders
6 include marketers, and it is impossible to determine from available
7 data which generation they may have procured to serve the load or
8 for what period. A further complication is that some of the retail
9 load commitments that will be in effect in 2006 and beyond will be
10 determined in procurements that have not yet occurred.³³

11 For these reasons, Dr. Hieronymus concluded that the HHIs produced by his
12 Available Economic Capacity analyses were “somewhat suspect.”³⁴ These same
13 weaknesses raise serious questions about the validity of Mr. Frame’s Available
14 Economic Capacity HHIs.

15 **Q. Do you agree with Mr. Frame that because the amount of capacity outside of**
16 **PJM East that potentially might be able to compete in PJM East far exceeds**
17 **the 7,300 MW limit of PJM’s Eastern Interface, it matters very little for**
18 **purposes of the Delivered Price Test analysis whether some portion of that**
19 **very large amount of external capacity might be unavailable due to other**
20 **commitments?**³⁵

21 A. No. The amount of capacity outside of PJM East that is competing for access
22 across the PJM Eastern Interface is a significant factor, particularly under the
23 proportional allocation methodology used by Mr. Frame in his HHI analyses.

24 Mr. Frame calculates how much of the capacity that the Petitioners own outside of
25 PJM East actually makes it through PJM’s Eastern Interface by dividing the
26 amount of capacity owned by the Petitioners outside of PJM East by the total
27 amount of capacity that he assumes is competing for access through the Eastern
28 Interface. For example, if the total amount of capacity competing for access to the

³³ Ibid., at page 50, lines 8-18.

³⁴ Ibid., at page 51, line 12.

³⁵ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 16, lines 8-17.

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1 PJM Eastern Interface is reduced by 50 percent because some of the capacity is
2 serving loads outside of PJM East, under Mr. Frame’s proportional methodology,
3 the amount of capacity owned by the Petitioners that would make it into PJM
4 would increase by a factor of two. That would have a significant impact on the
5 PJM East Energy Market HHIs calculated by Mr. Frame.

6 **Q. Do the difficulties and weaknesses identified by Dr. Hieronymus at the FERC**
7 **also apply to the new Available Economic Capacity analysis that**
8 **incorporates the merging parties’ FTR holdings that Mr. Frame has**
9 **presented in his Rebuttal Testimony?**³⁶

10 A. Yes. The results of Mr. Frame’s new Available Economic Capacity analysis are
11 suspect for the very reasons that Dr. Hieronymus articulated on behalf of the
12 Petitioners at the FERC.

13 **Q. Does Mr. Frame adequately address your criticism that his analytic**
14 **methodology unrealistically models generator outages?**³⁷

15 A. No. Mr. Frame avoids addressing the main point of our criticism of the manner in
16 which he models generating unit outages. Mr. Frame’s model represents an
17 idealized and over-simplified world that doesn’t accurately represent conditions in
18 the real world or the market behavior of participants in the system being modeled.
19 As we explained in our Direct Testimony:

20 In the real world, planned outages sometimes occur, at least in part,
21 during the summer and winter months. At the same time, forced
22 outages do not occur in a smooth manner throughout the year. In
23 other words, capacity availability on the actual PJM system is far
24 more “lumpy” than Mr. Frame’s model reflects. In the real world,
25 generating units are often completely out of service for planned or
26 forced outages – although in some circumstances units may be
27 partially derated for maintenance. In Mr. Frame’s modeling, all
28 generating units are represented as running at lower than maximum

³⁶ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 35, line 6, to page 39.

³⁷ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 16, line 19, to page 18, line 13.

1 capacity in all hours to reflect planned and forced outages, and are
2 never assumed to be off line completely.³⁸

3 The overall effect of Mr. Frame’s smooth and unrealistic representation of
4 outages is that his model tends to overstate system reliability and not consider at
5 all situations that are “worse than average.” However, the real world does not
6 operate like that. Generating units do fail and go off-line entirely; outages do
7 sometimes bunch in terms of timing and location. This lumpiness has very
8 important implications for the ability of generators to exercise market power and
9 for analysis of market power.

10 **Q. Are you talking about “extreme” outage scenarios, as Mr. Frame has**
11 **claimed?**³⁹

12 A. Not at all. We just believe that the modeling of outages should more closely
13 reflect real world conditions than the idealized and over-simplified approach used
14 by Mr. Frame. Or, if a model does not represent forced generator outages (and
15 other uncertain inputs) in a probabilistic manner, then its results should be
16 interpreted and applied with that limitation in mind.

17 **Q. Is it possible to reflect the “lumpiness” of real world generating unit outages**
18 **in market power modeling?**

19 A. Yes. As we discussed in our Direct Testimony, simulation models can be used to
20 analyze market power.⁴⁰ Some of the simulation models can represent generating
21 unit outages probabilistically rather than as simple deratings of capacity.

22 Alternatively, sensitivity cases can be examined with models in order to consider
23 reasonably likely circumstances that are somewhat worse than average conditions.

³⁸ Biewald-Fagan-Schlissel Direct Testimony, at page 42, lines 18-26.

³⁹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 17, line 5.

⁴⁰ Biewald-Fagan-Schlissel Direct Testimony, at page 26, line 3, to page 28, line 4.

1 **Q. Are all power plant outages relatively short-lived events?**

2 A. No. Power plant outages can last days, weeks, months or, in certain
3 circumstances, years.

4 **Q. Do you believe that the 7,300 MW import figure used by Mr. Frame is an**
5 **upper limit on the amount of capacity that can be imported across the PJM**
6 **East interface, as Mr. Frame testifies that you “appear” to do?⁴¹**

7 A. No. Mr. Frame first mischaracterizes our testimony and then argues that the
8 resulting mischaracterization is wrong. In fact, the results of our analysis are
9 robust and wouldn't be expected to change significantly if the amount of capacity
10 that can be imported into PJM East were higher than the 7,300 MW figure used
11 by Mr. Frame.

12 In addition to approximately 10,000 MW of Exelon-owned nuclear assets in
13 Illinois, Exelon and PSEG currently own more than 5,500 MW of nuclear,
14 baseload coal and hydro capacity west of the PJM Eastern transmission interface
15 and would continue to own approximately 4,400 MW of this capacity under the
16 revised mitigation plan proposed by the Petitioners. Thus, it is reasonable to
17 expect that the amount of this baseload power that the Petitioners could bring into
18 PJM East would increase as the import capability across the PJM Eastern
19 interface is raised.

20 For this reason, the Petitioners' market shares in the PJM East energy and
21 capacity markets likely would be higher if an import figure higher than 7,300 MW
22 were used in our analyses. As a result, the concentration of the PJM East market
23 would be higher, which would be reflected in higher HHI figures.

⁴¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 20, lines 13-16.

1 **Q. Was your criticism that Mr. Frame failed to consider transmission outages**
2 **and deratings meant to address only the PJM Eastern Interface?**

3 A. No. Mr. Frame does not reflect **any** transmission system outages or deratings in
4 his modeling. This is unrealistic. Transmission systems do experience outages and
5 deratings that impact the ability to import or export power across interfaces or to
6 deliver power from individual generating units. These outages and deratings will
7 limit the amounts of capacity that can be imported into any constrained areas, not
8 only PJM East.

9 **Q. Are transmission outages or deratings always “transient, rare and**
10 **unpredictable” as Mr. Frame claims?⁴²**

11 A. No. Many line and transformer elements make up a large interface such as the
12 PJM East interface. It is not unusual for these elements to experience problems or
13 require maintenance that can lead to outages and deratings. These outages and
14 deratings may be transient, rare and unpredictable, as Mr. Frame asserts.
15 However, they also can be planned and of substantial duration. For example, the
16 amount of power that could be transmitted through PSEG’s Branchburg
17 Switching Station was reduced by approximately 400 MW for more than twelve
18 months during 2004 and 2005 due to the reduced rating of the Station’s original
19 transformers.

20 **Q. Is it a repeated theme in your testimony that random, rare and transitory**
21 **events might result in screen failures as opposed to the exercise of market**
22 **power, as Mr. Frame has claimed?⁴³**

23 A. No. We agree with Mr. Frame that competition policy should prevent sustainable
24 and non-transitory increases in price. It is not reasonable to require that market
25 power analyses consider every possible situation or even highly unlikely

⁴² Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 21, lines 5-9.

⁴³ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 21, lines 12-15.

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1 conditions, so long as those highly unlikely conditions can be addressed through
2 some other means (e.g., bid capping) in order to avoid adverse outcomes. On the
3 other hand, it is not sufficient to consider, as Mr. Frame has done, only average
4 conditions (e.g., in terms of power plant outages) and conclude, as Mr. Frame
5 does, from that limited analysis of average conditions that market power will not
6 be a problem.

7 **Q. If actual conditions can be both better and worse than average conditions,**
8 **then would an analysis of average conditions provide reasonable predictions**
9 **of the likely ability of the merged company to exercise market power?**

10 A. No. While at first blush, one might think that an analysis using average
11 conditions for inputs would produce results that are, on average, correct, this is
12 not generally the case for electric power systems. Many of the relationships
13 between inputs and outputs are non-linear and/or asymmetrical.
14 Consider, for example, generating unit forced outages. At any particular time, the
15 system will experience an amount of forced outages that is greater or less than the
16 average. When less than the average amount of generating capacity is out of
17 service, the ability of a market participant to exercise market power will tend to
18 be less than it would be under average conditions.⁴⁴ When more than the average
19 amount of generating capacity is out of service, the ability to exercise market
20 power will tend to be greater than it would be under average outage conditions.
21 Mr. Frame has not provided any analysis or evidence showing that the effects of
22 these two non-average circumstances offset each other. Indeed, for market power
23 analyses, the ability of a market participant to exercise market power during
24 periods when a greater than average amount of capacity is out of service would
25 more than offset the reduced ability during periods when a less than average
26 amount of capacity is out of service.

⁴⁴ We say “tend to be” because the ability to exercise market power actually will depend on which units are out of service, who owns those units, and other factors.

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1 The supply curve can be described mathematically as having a convex shape. This
2 means that the slope of the curve becomes greater further along the curve. One
3 factor that influences the extent of market power potential at any load level is the
4 slope of the resource curve at that point, i.e., when the curve is steeper, any
5 change in the available resources produces a greater price change. If one looks at
6 any given load level, and adds or removes resources, the price increase of
7 removing resources is greater than the price decrease of adding the same amount
8 of resources.

9 Analyzing only “average conditions” in terms of generator outages will tend to
10 overlook common system conditions in which the supply curve is significantly
11 steeper than average and thereby tend to understate the extent of market power.

12 **Q. Do you have any comment on Mr. Frame’s claim that you have only**
13 **presented “ to a limited extent” revised HHI analyses that attempt to correct**
14 **for the computational deficiencies you have identified in his modeling**
15 **analyses?⁴⁵**

16 A. Yes. We have corrected for four of the flaws that we have identified in Mr.
17 Frame’s modeling: (1) his use of a proportional methodology to allocate the
18 limited transmission import capability across the PJM East Interface; (2) his
19 failure to reflect the improved operating performance at Salem and Hope Creek
20 that the Petitioners claim will result from the proposed merger; (3) his failure to
21 reflect the planned 125 MW uprate at Hope Creek; and (4) his failure to reflect
22 the recent operating performance of Exelon’s nuclear units.

23 As we have explained in our Direct Testimony, the use of just these four
24 corrections to Mr. Frame’s input assumptions results in the proposed merger
25 failing the FERC Appendix A Screening Analysis due to HHI changes of greater
26 than 100 in six of the ten hours studied in Mr. Frame’s Mitigation Scenario 1; in

⁴⁵ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 32, line 8, to page 33, line 2.

1 all ten of the hours studied in Mr. Frame’s Mitigation Scenario 2; and in seven of
2 the ten hours studied in Mr. Frame’s Mitigation Scenario 3.⁴⁶ In addition, the
3 proposed merger fails the FERC Appendix A Screening Analysis in all ten hours
4 studied in each of our three additional Mitigation Scenarios.⁴⁷

5 Therefore, even when we accept many of Mr. Frame’s questionable input
6 assumptions, the proposed merger can be shown to significantly increase the
7 levels of concentration in the PJM Energy Market in almost all of the hours
8 examined in each of the mitigation scenarios postulated by Mr. Frame and
9 Synapse. Accordingly, there is no need for us to correct for the remainder of Mr.
10 Frame’s incorrect input assumptions and methodologies.

11 **Q. Do you have any response to Mr. Frame’s claim that your criticism that he**
12 **fails to reflect the improved performance of the Salem and Hope Creek**
13 **plants that the Petitioners expect as a result of the proposed merger is**
14 **“misguided?”⁴⁸**

15 A. Yes. We do not believe that our criticism of Mr. Frame is misguided. We believe
16 that his HHI analyses should reflect, to the extent possible, the most realistic
17 assessment of conditions after the proposed merger. The Petitioners have claimed
18 that the merger will lead to significantly improved performance at Salem and
19 Hope Creek. For this reason, Mr. Frame’s HHI analyses should reflect that
20 improved performance.

21 However, it appears that Mr. Frame and the Petitioners want it both ways. They
22 want the BPU to accept the merger based on their claim that it will lead to
23 improved operations at Salem and Hope Creek but they don’t want to reflect that
24 improved performance in their analyses of the impact of the merger on
25 competition.

⁴⁶ Biewald-Fagan-Schlissel Direct Testimony, at page 78, lines 4-15.

⁴⁷ Ibid., at page 79, lines 4-15.

⁴⁸ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 22, line 15, to page 23, line 5.

1 **Q. Do you have any comments on Mr. Frame’s claim that the expected merger-**
2 **induced increase in output at Salem and Hope Creek is a pro-competitive**
3 **event and this is true notwithstanding what effect it may have on HHI**
4 **computations?⁴⁹**

5 A. Yes, we have several comments on Mr. Frame’s claim. First, the additional output
6 from Salem and Hope Creek will increase EEG’s market shares in many hours
7 and, consequently, will not be pro-competitive, no matter what Mr. Frame may
8 claim. Second, Mr. Frame’s claim that “increased output from low cost nuclear
9 generators will lower the market clearing prices during all seasons and time
10 periods” depends on factors such as the ability of market participants to exercise
11 market power. Also, whether ratepayers will benefit from the increased output of
12 Salem and Hope Creek will depend on the prices at which that increased output is
13 sold. Indeed, contrary to what Mr. Frame claims, the ability to increase its profits
14 by selling the increased output from Salem and Hope Creek at the higher prices
15 will provide an additional incentive or motive for EEG to exercise market power.
16 Finally, reflecting the additional merger-induced output from Salem and Hope
17 Creek will result in a higher HHI, a fact that Mr. Frame acknowledges. However,
18 Mr. Frame is willing to ignore this result and to claim instead that the increased
19 output will be pro-competitive. This is very disturbing. Either Mr. Frame should
20 rely on the results of his analytical method or not. He should not rely on his model
21 only where it supports the merger sought by his clients and ignore those results
22 that are contrary to that goal.

⁴⁹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 22, lines 19-21.

1 **Q. Please comment on Mr. Frame’s claim that the proposed power uprate of the**
2 **Hope Creek plant is not scheduled to occur until the end of November 2007.⁵⁰**

3 A. Mr. Frame’s claim is contrary to public statements by PSEG and the Petitioners’
4 responses to data requests.⁵¹ However, it is possible that the Petitioners have
5 decided to delay the uprate until Hope Creek’s 2007 refueling outage.

6 **Q. Would it be reasonable for Mr. Frame to ignore this planned uprate if it**
7 **were not scheduled to occur until November 2007?**

8 A. No. As we noted earlier, analyses of the effects of proposed mergers should be
9 based on representative future conditions. Significant changes, such as the
10 addition of another 121-125 MW of nuclear capacity, above and beyond that
11 currently owned by PSEG or Exelon, clearly should be reflected in any analysis of
12 the effect of the proposed merger on competition, including the HHI analyses
13 presented by Mr. Frame.

14 There is nothing magic about the year 2006. Mr. Frame could as easily have
15 prepared analyses for 2007, 2008 or subsequent years. Such analyses could then
16 reflect planned generation additions and retirements, uprates at other plants,
17 transmission upgrades, revised fuel prices, revised market-clearing prices, and
18 revised load obligations, as Mr. Frame claims.⁵²

19 Indeed, we believe it certainly would be appropriate to examine the effects of the
20 proposed merger over a number of years, not solely in the first year in which the
21 merger would be closed. That would give the Board insights into the possible
22 impact of the merger on competition over time.

⁵⁰ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 23, lines 10-12.

⁵¹ For example, see footnote no. 43 on page 47 of the Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005.

⁵² Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 23, lines 14-21.

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1 **Q. Mr. Frame dismisses as “specious” your criticism that he failed to reflect**
2 **forward capacity purchases that EEG will make from other PJM market**
3 **participants when performing his HHI analyses. Do you agree?**⁵³

4 A. No. Mr. Frame claims that our criticism is “specious” particularly since, he says,
5 we provide no guidance on how we believe it is appropriate to take into account
6 unidentified purchases that the merged firm may or may not make in the future.
7 This claim is absurd on its face. All that Mr. Frame had to do was to ask his
8 clients what purchases they have already made for 2006 or that they intend to
9 make during 2006. [

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11]⁵⁴ In the alternative, Mr. Frame could
12 average the forward capacity purchases that the Petitioners have made in recent
13 years.

14 **V. ECONOMIC VERSUS PRO-RATA ALLOCATION OF LIMITED**
15 **TRANSMISSION IMPORT CAPABILITY**

16 **Q. Does Mr. Frame support his contention that “the economic allocation [of**
17 **scarce transmission import capability] procedure is conceptually inferior [to**
18 **a pro-rata allocation]?”**⁵⁵

19 A. No. Mr. Frame *defines* “proportional allocation” by stating that it recognizes the
20 presence of all competing suppliers in the market, but nowhere does he explain
21 why he believes it is conceptually superior to an “economic allocation” procedure.
22 The fact that the proportional allocation methodology produces a greater number
23 of competing suppliers for the HHI test is a direct result of applying the
24 methodology, not a supporting explanation for the conceptual basis of the alleged
25 superiority. In fact, his contention in his rebuttal statement (above) is directly at

⁵³ Ibid., at page 24, lines 1-7.

⁵⁴ Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 51, lines 10-13 and Exhibit BFS-7, at page 9 of 14.

⁵⁵ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 24, lines 21-22.

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1 odds with his direct testimony in this proceeding, where he states that economic
2 allocation is “more realistic in terms of which suppliers ultimately will gain
3 access to limited transmission capability...”⁵⁶ Indeed, economic allocation is a
4 more realistic methodology in this instance, due to the way in which PJM operates
5 its system and allocates its transmission rights.

6 **Q. Is economic allocation conceptually superior to pro-rata allocation in this**
7 **instance?**

8 A. Yes, absolutely. The intent of the transmission allocation procedure is to
9 determine the reasonably likely users of the interface in question in an attempt to
10 sufficiently define the world of competing suppliers, not to figure out a theoretical
11 way to maximize the number of suppliers in order to demonstrate a more
12 competitive market. The use of a centralized economic dispatch approach in PJM
13 places all potential “users” of the interface in an economic auction; and the
14 existence of the auction-based FTR issuing process completes the way in which
15 the PJM East interface allocation is, *in actuality*, based on economics. Given the
16 wholly economic framework defining PJM’s transmission use policies, any claim
17 that a pro-rata methodology is conceptually superior must include evidence of
18 *how* it is superior and not just a self-serving assertion, if it is to be rationally
19 considered.

20 For example, if Mr. Frame could describe how suppliers from his expanded pool
21 of suppliers (based on pro-rata) are able to secure economic dispatch and
22 essentially obtain PJM East market prices, then that would be evidence of perhaps
23 equal merit for the pro-rata and the economic allocation method. However, Mr.
24 Frame does not describe any such process, likely because it is not possible in the
25 PJM market if a supplier does not hold an FTR. Thus Mr. Frame’s rebuttal and

⁵⁶ Direct Testimony of Rodney Frame, at page 36, lines 13-15.

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1 direct testimony contain no such evidence of conceptual superiority of the pro-
2 rata method.

3 **Q. Does FERC require the use of a pro-rata allocation methodology?**

4 A. No. FERC's Order No. 642 (Docket No. RM98-4-000, November 15, 2000,
5 FERC's revised filing requirements under the Merger Policy Statement) states:

6 Applicants must describe and support the method used and show
7 the resulting transfer capability allocation. We will not at this time
8 specify particular rules or require a single method for transmission
9 allocation. However, since transmission allocation is a key
10 parameter in defining relevant markets, there are benefits to
11 sensitivity analysis using different allocation methods. We
12 encourage such analysis.⁵⁷

13 In Appendix A to the Merger Policy Statement itself (Order No. 592, December
14 18, 1996) FERC said essentially the same thing:

15 In these cases [transmission path limitation] the ATC must be
16 allocated among the potential suppliers for analytic purposes.
17 There are various methods for accomplishing this allocation.
18 Applicants should support the method used.

19 The FERC Order in Docket ER96-2495-016 et al. (107 ¶ FERC 61,018, Order on
20 Rehearing and Modifying Interim Generation Market Power Analysis and
21 Mitigation Policy, April 14, 2004) states:

22 Since there is usually more generation capable of supplying a
23 destination market than available transmission, access to the
24 critical interfaces must be allocated. Either an economic (least
25 cost) or pro-rata (shares based on share of supply) can be used.⁵⁸

⁵⁷ At pages 56-57.

⁵⁸ Appendix F, footnote 217.

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1 **Q. Are the results of your economic allocation of the 7,300 MW of transmission**
2 **import capability across the PJM Eastern Interface subject to “knife edge”**
3 **effects, as Mr. Frame claims, in which small changes in either fuel costs or**
4 **market clearing prices could produce large changes in the results?⁵⁹**

5 **A.** No. In our economic allocation of resources across the PJM Eastern Interface, we
6 started with the resources in the “Rest of PJM Pre-2004” area as specified in Mr.
7 Frame’s model and ordered these resources by the unit’s marginal cost. However,
8 we excluded the hydro resources, which had been priced at zero cost but whose
9 offer prices would be much higher (based upon some recognition of water
10 limitations and opportunity costs). This produced a supply curve with a sharp
11 discontinuity at about 7,300 MW, which happens to be the PJM Eastern Interface
12 limit.

13 [

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18] This

19 sharp cost disparity also means that there are no “knife edge” effects resulting
20 from this economic application.

⁵⁹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 25, lines 8-11.

1 **Q. Please comment on Mr. Frame’s claim that you have used inconsistent**
2 **modeling techniques to determine the amount of interface capacity that**
3 **would be assigned to the merging parties under an economic allocation**
4 **procedure and, as a result, have greatly increased the amount of interface**
5 **capacity assigned to the merging parties.⁶⁰**

6 A. Mr. Frame’s claim that we have somehow greatly increased the amount of
7 interface capacity assigned to the merging parties is misleading. In performing
8 our analysis of the generating units that would use the PJM Eastern Interface
9 under an economic allocation methodology, we used Mr. Frame’s figures for the
10 capacity that was available in the “Rest of PJM Pre-2004” area shown in the
11 figure on page 26 of his Rebuttal Testimony. This capacity included 4,600 MW
12 of capacity that Mr. Frame had assumed was imported into this area from the
13 “Rest of PJM Expanded” area. Mr. Frame had allocated this 4,600 MW of import
14 capability using a pro-rata methodology.

15 Our use of Mr. Frame’s figures was conservative. If we had made an economic
16 allocation of the 4,600 MW of import capability into the “Rest of PJM Pre-2004”
17 area from the “Rest of PJM Expanded” area, more of Exelon’s approximately
18 10,000 MW of low-cost nuclear capacity in Illinois would have made it into the
19 “Rest of PJM Pre-2004” area and from there across the PJM Eastern Interface into
20 PJM East. This would have increased, not reduced (as Mr. Frame claims), the
21 amount of the PJM Eastern Interface import capability assigned to the merging
22 parties.

⁶⁰ Rebuttal Testimony of Rodney Frame, at page 25, line 14, to page 26, line 2.

1 **VI. THE NORTHERN NEW JERSEY MARKET**

2 **Q. Mr. Frame testifies in his Rebuttal Testimony that “My direct testimony**
3 **indicates that the merger-created screen violations in [Northern New Jersey]**
4 **will be eliminated if the merging parties’ mitigation package includes the**
5 **divestiture of 100 MW that is either coal-fired or nuclear and that is either**
6 **located within [Northern New Jersey] or is deliverable there.⁶¹ Do you see**
7 **any evidence that he actually made this statement in his Direct Testimony?**

8 **A. No. Mr. Frame’s Direct Testimony is silent on this point.**

9 **Q. Does Mr. Frame’s analysis of the Northern New Jersey market suffer from**
10 **the same problems you identified in your Direct Testimony concerning his**
11 **analyses of the PJM East market?**

12 **A. Yes.⁶²**

13 **Q. Is it reasonable to expect that additional capacity might have to be divested**
14 **within Northern New Jersey to bring the HHI changes from the proposed**
15 **merger to within the 50 points permitted by the FERC Merger Guidelines?**

16 **A. Yes. As we discussed in our Direct Testimony, because of the flaws that we have**
17 **identified in Mr. Frame’s assumptions and analytic methodology, we are**
18 **concerned that the 100 MW of divested capacity will be inadequate even to**
19 **satisfy the FERC Merger Guidelines.⁶³**

⁶¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 41, line 22, to page 42, line 2.

⁶² Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 63, lines 1-9.

⁶³ Ibid., at page 63, lines 10-17.

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1 **Q. Do you have any comment on Mr. Frame’s claim that the competitive**
2 **analysis of a merger focuses upon the change in competitive conditions that**
3 **will occur as a result of a merger, not on whether Northern New Jersey will**
4 **remain an extremely concentrated market after the merger and that the**
5 **merged firm will be the dominant firm?**⁶⁴

6 A. Yes. Even with the divestiture of 100 MW of capacity, the Northern New Jersey
7 energy market will be more concentrated after the proposed merger than before.
8 This is an adverse impact that violates the positive benefits standard that the
9 Board is applying to evaluate the proposed merger.

10 **Q. Does Mr. Frame present any analysis to support his claim that PJM’s**
11 **existing offer caps will adequately protect against the exercise of market**
12 **power in the Northern New Jersey market?**⁶⁵

13 A. No. Mr. Frame does not present any evidence to support his claim that PJM’s
14 existing offer caps will adequately protect ratepayers against the exercise of
15 market power.

16 **VII. MR. FRAME’S CRITICISMS OF THE SYNAPSE ELMO MODELING**
17 **ARE MISLEADING AND INCORRECT**

18 **Q. Please respond to Mr. Frame’s claim that your ELMO modeling predicts**
19 **only a very small merger related price increase due to strategic bidding.**⁶⁶

20 A. Mr. Frame’s claim is simply wrong. As we discussed in our Direct Testimony, the
21 \$12 million average annual electric merger-related savings for New Jersey
22 ratepayers claimed by the Petitioners for the years 2006-2009 would be
23 eliminated by just a 0.20 percent increase in wholesale prices from the exercise of

⁶⁴ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 43, lines 1-8.

⁶⁵ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 43, lines 10-14.

⁶⁶ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 8, line 18, to page 9, line 4, and at page 66, lines 1-16.

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1 market power.⁶⁷ Using our corrected input assumptions, the potential increases in
2 market prices from the exercise of market power range from 0.7 percent to 2.3
3 percent.⁶⁸ Even using all of Mr. Frame’s assumptions, the potential increases in
4 market prices from the exercise of market power range from 0.2 percent to 1.2
5 percent.⁶⁹ Using just the lower end of the range of these increases would fully
6 offset the \$12 million average annual electric merger-related savings that the
7 Petitioners claim for New Jersey ratepayers.

8 **Q. Would taking load obligations into account eliminate the incentives to**
9 **increase prices through strategic bidding, as Mr. Frame has claimed?**⁷⁰

10 A. No. The new analysis, presented in Exhibit RF-19, that Mr. Frame has prepared
11 to demonstrate this claim is misleading and based on faulty assumptions. In fact,
12 contrary to what Mr. Frame has assumed, it is not reasonable to expect that EEG’s
13 load serving subsidiaries PSE&G and PECO would have to pay the higher market
14 prices for the energy they obtain – in many situations the load serving entities
15 could have contractual arrangements of various types that would protect them
16 from the full spot market prices. However, over time those contractual prices
17 would change to reflect the increased market prices.

18 Nor is it reasonable to expect that the load serving entities would be unable to
19 pass along market price increases to their ratepayers. There may be some delay in
20 doing so but ratepayers would eventually pay the higher market prices. If not
21 immediately through paying for purchases in the spot market, then later as new
22 supply contracts are priced at the new market levels.

23 Therefore, we agree with the figures for Increased Generator Profits from
24 Withholding shown in Mr. Frame’s Exhibit RF-19. However, Mr. Frame’s figures

⁶⁷ Biewald-Fagan-Schlissel Direct Testimony, at page 89, line 14, to page 90, line 6.

⁶⁸ Ibid., at page 85, lines 5-11.

⁶⁹ Ibid., at page 84, line 22, to page 85, line 4, and Exhibit BFS-9, Table 5, at page 4.

⁷⁰ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 9, lines 1-4, and page 60, lines 15-23.

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1 for Increased Costs of Serving Load do not represent the real costs to the load
2 serving entities. Rather, they would not occur because of existing supply
3 contracts, or they would be passed onto customers as market costs.

4 For all of these reasons, Mr. Frame's conclusion that consideration of load
5 obligations would eliminate the incentive for EEG to exercise market power is
6 wrong.

7 **Q. Does Mr. Frame provide a persuasive argument that there is no need for**
8 **simulation modeling to reflect the behavior of market participants?**⁷¹

9 A. No. Basically, all that Mr. Frame does is to state his opinion that the results of a
10 simulation analysis would not be useful to the Board. We disagree.

11 **Q. Has Mr. Frame presented market power testimony in any other proceeding**
12 **that was based on the use of a simulation model?**

13 A. Yes. In testimony submitted to the Missouri Public Service Commission in
14 February 1998 and the Mississippi Public Service Commission in August 1998,
15 Mr. Frame used production cost analyses to conduct a behavioral analysis which
16 sought to assess whether a company acting unilaterally might be able to exercise
17 market power in energy markets.⁷² The simulation model that Mr. Frame used in
18 that case was quite detailed and was able to represent transmission constraints
19 between various locations on the grid as well as randomly occurring generating
20 units outages on a probabilistic basis.

⁷¹ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 58, line 19, to page 59, line 6.

⁷² *Report of Ameren to the Public Service Commission of Missouri on Market Power Issues*, dated February 27, 1998, at pages 64-67, and , dated February 27, 1998, at pages 64-67, and *Report to the Mississippi Public Service Commission on Retail Market Power Issues*, dated August 1998, at page 65-69. Both of these documents were provided in PSEG's response to RAR-MKT-81(b).

1 **Q. Do the conclusions and findings of the PJM MMU Merger Analyses provide**
2 **evidence that a simulation model is not needed, as Mr. Frame has claimed?**⁷³

3 A. No. As we have noted earlier, Mr. Frame has misrepresented the findings and
4 conclusions of the PJM MMU Merger Analyses. Rather than support Mr. Frame's
5 claim that simulation modeling is not needed for the Board to evaluate the
6 proposed merger, the PJM MMU Merger Analyses show the need for such
7 modeling.

8 **Q. Is Mr. Frame's criticism that your ELMO modeling did not model the hourly**
9 **behavior of the market under a wide variety of conditions and bidding**
10 **behavior correct?**⁷⁴

11 A. No. ELMO simulates the market at a number of load levels for 8,760 hours of the
12 year. This is far more than the 10 periods examined in Mr. Frame's analyses.

13 **Q. Mr. Frame has pointed out your failure to conduct all of the specific**
14 **simulation analyses that you have identified as being necessary to assess the**
15 **competitive impacts of a proposed merger.**⁷⁵ **Please explain why you have not**
16 **undertaken all of the simulation analyses that you identified in your Direct**
17 **Testimony as being necessary.**

18 A. ELMO is designed as a screening model to identify the potential for market
19 power. The simulation analyses that we described in our Direct Testimony
20 indicate the next steps that could be taken to analyze in more detail the potential
21 impacts of the proposed merger on competition.⁷⁶ Given the results of our ELMO
22 modeling, we believe that it is the responsibility of the Petitioners to present such
23 a simulation analysis.

⁷³ Ibid., at page 59, lines 6-14.

⁷⁴ Ibid., at page 59, lines 16-20.

⁷⁵ Ibid., at page 59, line 22, to page 60, line 3.

⁷⁶ Biewald-Fagan-Schlissel Direct Testimony, at page 26, line 3, to page 28, line 4.

1 **Q. Do the use of a single resource curve representing complete units and the**
2 **absence of operational limits related to unit commitment and ramping limit**
3 **the applicability of the ELMO analysis and bias the results, as Mr. Frame**
4 **has claimed?**⁷⁷

5 A. No. ELMO does use a single supply curve and does not impose any restrictions
6 on dispatching resources. However, this likely under represents the potential for
7 exercising market power compared to a more realistic system, where competing
8 resources might not be available or could not ramp fast enough to meet load and
9 resource changes. The more restrictions placed on the supply options, the fewer
10 resources are effectively available at any given time and location and, therefore,
11 one could reasonably expect, the greater the potential for the exercise of market
12 power.

13 **Q. Please comment on Mr. Frame’s claim that generators in PJM East are**
14 **frequently subject to cost-based offer caps and therefore cannot engage in**
15 **the type of strategic bidding you envisaged in your ELMO analysis.**⁷⁸

16 A. Although the existence of cost-based offer caps may limit the incentive for market
17 participants to exercise market power, they don’t eliminate this incentive. A ten
18 percent cap thus provides a substantial incentive because additional profit can be
19 gained where the cap is set at 10 percent above marginal cost, relative to the
20 situation where offers are closer to marginal costs. Also, there are instances when
21 the cost capping does not apply, for example when the binding constraint is the
22 PJM East Interface itself.

⁷⁷ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 62, lines 2-16.

⁷⁸ Ibid., at page 63, lines 5-8.

1 **Q. Please comment on Mr. Frame’s claim that your analysis effectively assumes**
2 **that the PJM Eastern Interface is constrained 100 percent of the time and,**
3 **therefore, ignores the price protections that customers in PJM East have**
4 **during the 97.5 percent of the year when they have access to a much broader**
5 **market.⁷⁹**

6 A. First we have assumed, as did Mr. Frame, that PJM East is the relevant market to
7 study.

8 Second, the price increases we have identified do not occur uniformly in all hours
9 of the year. The 2.5 percent price increase due to market power that we found in
10 Synapse Mitigation Scenario 4 is the average increase over the entire year.

11 However, the increases in individual hours may be substantially higher or lower
12 than 2.5 percent. Consequently, substantial profits can be earned by generators
13 during only a limited number of hours in the year.

14 Moreover, historical PJM data shows that during 2004, the price at the PJM
15 Eastern Hub was greater than that at the Western Hub for 3,952 hours of the year.
16 The average price difference was \$8.56/MWh. Consequently, Mr. Frame’s
17 implication that the Board should only be concerned about the potential for the
18 exercise of market power during a mere 2.5 % of the hours of the year is wrong.

19 **Q. Mr. Frame has criticized your ELMO modeling because you failed to treat**
20 **external supplies as price takers.⁸⁰ Is he correct that you failed to treat**
21 **external supplies as price takers?**

22 A. No. The external supplies are never on the margin in ELMO. Thus, these
23 resources are treated as price takers, not price setters. Mr. Frame’s criticism is
24 simply wrong – we do treat the external supplies in the manner in which he
25 suggests they should be treated.

⁷⁹ Ibid., at page 63, lines 9-21.

⁸⁰ Ibid., at page 63, line 22 to page 64, line 13.

1 **Q. Mr. Frame has cited a number of factors which he claims cause ELMO to**
2 **overstate the price impacts that are likely to result from the merger.⁸¹ Are**
3 **there any assumptions that cause your ELMO modeling to understate the**
4 **price impacts that are likely to result from the merger?**

5 A. Yes. There are a number of assumptions that cause our ELMO modeling to
6 understate the price impacts that are likely to result from the merger:

- 7 ▪ We use Mr. Frame’s data in which outages are represented by derated
8 capacity rather than probabilistically. This means that we have ignored
9 situations in which greater amounts of capacity than average are out of
10 service.
- 11 ▪ We have represented PJM East as a single market with no internal
12 transmission constraints. This means that we have ignored the potentially
13 higher profits from the exercise of market power in those smaller
14 constraints within PJM East (such as Northern New Jersey) that are
15 sometimes binding.
- 16 ▪ We have not assumed any operational limits related to unit commitment or
17 ramping, or any operational restrictions related to grid stability
18 requirements.
- 19 ▪ We have assumed independent pricing behavior, that is, no implicit or
20 explicit collusion among generation suppliers.

21 **VIII. WEAKNESSES IN THE PETITIONERS’ MITIGATION PROPOSAL**

22 **Q. Is Mr. Frame correct when he claims that “concerns about adverse merger**
23 **related effects on competition in capacity markets are fully mitigated?”⁸²**

24 A. No. The Petitioners have proposed an interim capacity market mitigation plan, as
25 Mr. Frame testifies. However, there is no permanent Petitioner capacity
26 mitigation proposal. Indeed, at the present time, there is not even an approved
27 long-term design for the PJM capacity markets, as the PJM RPM proposal is still
28 pending before the FERC. Therefore, it is not accurate to claim that concerns

⁸¹ Ibid., at page 62, line 1, to page 65, line 21.

⁸² Ibid., at page 7, lines 11-20.

1 about merger-related effects on competition in capacity markets are “fully
2 mitigated.”

3 **Q. Do you agree with Mr. Frame that it is not necessary for the merging parties**
4 **to identify the particular generating units that they will divest under their**
5 **market power mitigation proposal or the identity of the purchasing parties?**⁸³

6 A. No. As we noted in our Direct Testimony, the location, fuel type, marginal
7 operating costs, operating characteristics, age, and economic viability of the
8 divested units will have a significant impact on the ability of the merged company
9 to exercise market power in both the short-term and the long-term.⁸⁴

10 At the same time, the post-mitigation market concentration indices will be very
11 different if the purchasers of the divested capacity are new participants in the
12 market or already own substantial generating assets.

13 **Q. Should the Board be satisfied because the Petitioners have committed to**
14 **making a post-divestiture filing at the FERC?**⁸⁵

15 A. No. We believe that it is essential for the Board to consider which specific
16 generating units will be divested by the merged company and who will be
17 purchasers of those units before it can conclude that the merger will provide net
18 benefits for ratepayers.

19 **Q. Mr. Frame also argues that the Board should be satisfied because he**
20 **examined the concentration effects of the merging parties’ proposed**
21 **mitigation under a range of plausible scenarios.**⁸⁶ **Do you agree?**

22 A. No. As we have explained in our Direct Testimony, Mr. Frame examined only a
23 very limited range of mitigation scenarios.⁸⁷ The effect of the proposed merger

⁸³ Ibid., at page 7, line 21, to page 8, line 5 and page 49, line 5, to page 50, line 7.

⁸⁴ Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 65, lines 15-20.

⁸⁵ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 8, lines 1-5.

⁸⁶ Rebuttal Testimony of Rodney Frame, Exhibit JP-24, at page 49, lines 11-12.

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1 on HHI concentration indices is very different if you consider other realistic
2 scenarios in which the divested capacity is assumed to be purchased by parties
3 that already are significant participants in PJM.⁸⁸ In these scenarios, the proposed
4 merger fails the FERC Appendix A screens by substantial margins in each hour
5 studied even if we use Mr. Frame’s input assumptions concerning future nuclear
6 performance and the allocation of the limited import capability across the PJM
7 Eastern Interface.⁸⁹

8 **Q. Does Mr. Frame’s Rebuttal Testimony successfully address your concerns**
9 **about the Petitioners’ novel virtual divestiture of the energy from their**
10 **nuclear plants?**

11 A. No. Our concerns about the weaknesses in the Petitioners’ untried virtual
12 divestiture remain.⁹⁰ The Petitioners still will retain operational control over their
13 nuclear plants even though the energy output of those units will be sold to other
14 parties.

15 **IX. FTR ANALYSES**

16 **Q. Mr. Sorenson states that your testimony claims FTR ownership is essentially**
17 **equivalent to generation resource ownership within a constrained zone.⁹¹**
18 **Did you state that FTR ownership is equivalent to ownership of a generation**
19 **resource within a constrained zone?**

20 A. No. In our direct testimony at page 39, we stated that holding FTRs places a
21 generator “financially” into the PJM East market. This is not equivalent to

⁸⁷ Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 75, lines 6-20.

⁸⁸ See Table 11 on page 79 of the Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005.

⁸⁹ Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005, at page 78, line 16, to page 79, line 3.

⁹⁰ See page 68, line 19, to page 70, line 21, of the Biewald-Fagan-Schlissel Direct Testimony, dated November 14, 2005.

⁹¹ Rebuttal Testimony of Gary Sorenson, at page 19, lines 5-9.

1 owning a generator in the constrained zone, and we make no such claim. At this
2 point, we clarify that we are referring to the PJM East energy market.

3 **Q. Mr. Sorenson claims that you make the above statement “without support”.**
4 **How do financial transmission rights place a generator west of the PJM**
5 **Eastern Interface “financially” into the PJM East energy market?**

6 A. A generator dispatched on by PJM will receive the spot price at that generator bus
7 or pricing point, for either the day-ahead or real-time spot market. If that same
8 generator also holds an FTR between that same generator pricing point and a load
9 point or zone within the PJM East market area, then that generator will receive a
10 separate payment for that FTR, which when added to the revenues received for
11 generation injection, will roughly be equal to the revenues a generator dispatched
12 on in the PJM East market area would receive (assuming equally paired quantities
13 of generation and FTR holdings, and assuming generation sale into the Day
14 Ahead market). Thus a generator located west of the PJM East interface could
15 financially guarantee “delivery” of its generation to the PJM East market area in
16 the Day Ahead market by holding an FTR to hedge against congestion costs
17 between the generation pricing point and the PJM East market area.

18 **Q. Does Mr. Sorenson address your evidence that demonstrates the limited**
19 **transmission import capacity across the PJM East interface is being allocated**
20 **economically via the FTR auctions, and that PSEG and Exelon hold a**
21 **substantial share of that capacity?**

22 A. No, he does not. His rebuttal testimony addresses the fundamental nature of
23 FTRs, and discusses their use as a hedging instrument, but he does not dispute the
24 notion that FTR ownership across the PJM East interface represents an economic
25 allocation of the limited transmission capacity.

1 **X. THE BGS AUCTION**

2 **Q. Petitioner Rebuttal Witness Hogan has testified that “Simply put, if a**
3 **generator could not exercise market power by physical withholding or**
4 **excessive bids in the real-time spot market then the generator could not**
5 **successfully increase its ability to exercise market power in the forward**
6 **contract markets.”⁹² Has Dr. Hogan prepared any analyses of the ability of**
7 **the new merged company EEG to exercise market power in the wholesale**
8 **markets?**

9 **A. No.**⁹³

10 **Q. Has Mr. Hogan testified that a party who is able to exercise market power in**
11 **the wholesale markets would not be able to exercise market power or affect**
12 **prices in the BGS auction?**

13 **A. No.**

14 **Q. Does this complete your Surrebuttal Testimony?**

15 **A. Yes.**

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⁹² Rebuttal Testimony of William Hogan, at page 12, lines 1-4.

⁹³ Ibid., at page 5, lines 1-8.