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CAUSE NO. 43393

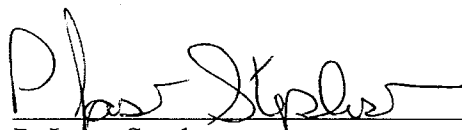
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APR 11 2008

INDIANA UTILITY
REGULATORY COMMISSION

VERIFIED PETITION OF NORTHERN INDIANA)
PUBLIC SERVICE COMPANY, AN INDIANA)
CORPORATION, FOR APPROVAL PURSUANT TO)
IND. CODE §§ 8-1-2-42(a), 8-1-8.8-11 AND TO THE)
EXTENT NECESSARY 8-1-2.5-6 OF RENEWABLE)
WIND ENERGY PROJECT POWER PURCHASE)
AGREEMENTS WITH BUFFALO RIDGE I LLC AND)
BARTON WINDPOWER LLC, INCLUDING THE)
TIMELY RECOVERY OF COSTS THROUGH RATES)
AND CONFIDENTIAL TREATMENT OF POWER)
PURCHASE AGREEMENT PRICING AND RELATED)
CONFIDENTIAL INFORMATION.)

REBUTTAL TESTIMONY OF PETITIONER
NORTHERN INDIANA PUBLIC SERVICE COMPANY


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VERIFIED REBUTTAL TESTIMONY OF FRANK A. SHAMBO
DIRECTOR, REGULATORY AND GOVERNMENT POLICY
NORTHERN INDIANA PUBLIC SERVICE COMPANY
CAUSE NO. 43393

1 **Q1. Please state your name and business address.**

2 A1. My name is Frank A. Shambo. My business address is 801 East 86th Avenue,
3 Merrillville, Indiana 46410.

4 **Q2. Are you the same Frank Shambo that offered Verified Direct Testimony in this**
5 **proceeding?**

6 A2. Yes, I am.

7 **Q3. What is the purpose of your testimony in this proceeding?**

8 A3. My testimony will respond to Mr. Dauphinais' assertion that the cost of the power
9 purchase agreements Northern Indiana Public Service Company ("NIPSCO") has entered
10 into to purchase wind power (the "Wind PPAs") should not be allocated to customer
11 classes on a volumetric basis. I also explain the basis for my disagreement with Ms.
12 Smith's conclusion that NIPSCO should be required to issue a new request for proposals
13 focusing on Indiana wind.

14 **Q4. Do you agree with Mr. Dauphinais that the costs of the Wind PPAs should be**
15 **allocated to classes using the most recent production plant investment demand**
16 **allocation method approved by the Commission?**

1 A4. No, I do not believe the Commission should accept Mr. Dauphinais' proposal on cost
2 allocation of the Wind PPAs' costs in this proceeding. NIPSCO is proposing to recover
3 the costs of the Wind PPAs on a volumetric basis via a rate adjustment mechanism. Such
4 recovery is consistent with the treatment of power purchases in Indiana and is the same
5 treatment approved by the Commission in other proceedings authorizing the recovery of
6 wind purchase power costs including Cause No. 43328 concerning Indiana Michigan
7 Power Company, Cause No. 43097 concerning Duke and Cause No. 43259 concerning
8 Vectren. Moreover, I disagree with Mr. Dauphinais' underlying premise that the Wind
9 PPAs should be treated as capacity.

10 **Q5. Why do you disagree with Mr. Dauphinais that the Wind PPAs should be treated as**
11 **capacity?**

12 A5. First, Mr. Dauphinais (p. 11) concedes that the Wind PPAs have not obtained a level of
13 interconnection service with the Midwest Independent Transmission System Operator
14 ("Midwest ISO") that would allow them to count as capacity. I am aware of Mr.
15 Dauphinais' recommendation that NIPSCO renegotiate the terms of the deal to provide
16 for interconnection that might enable the Wind PPAs to count as capacity, but that has
17 not occurred and NIPSCO has no contractual rights to negotiated for such
18 interconnection.

19 Second, Mr. Dauphinais (p. 11) asserts that the Wind PPAs could have a capacity
20 component. However, any capacity value NIPSCO could receive from the Wind PPAs is
21 not the same as the capacity provided by NIPSCO's generating units. Wind power is

1 significantly different in terms of availability than that provided by NIPSCO's generating
2 units. It is limited in that it does not always blow when electricity is needed or
3 consistently in the same geographical location at all times of the year.

4 Finally, Mr. Dauphinais (p. 3) appears to propose that the Wind PPAs' costs be allocated
5 first to the various customer classes based on a production demand allocation and then
6 allocated within the class on a volumetric basis. If this methodology is used, the impact
7 on the residential and small commercial customers will change and the complexity of the
8 rate adjustment proceedings will increase. While NIPSCO's interest is mainly in cost
9 recovery, it is not indifferent to the allocation of costs among the customer classes.

10 **Q6. Please discuss the impact of Mr. Dauphinais' proposal on the customer classes.**

11 A6. Mr. Dauphinais proposes that the costs should be allocated based on the production
12 demand allocation factors from NIPSCO's most recent cost of service study approved by
13 the Commission. NIPSCO's last cost of service study was approved by the Commission
14 in 1987. Mr. Dauphinais presents no evidence that this 1987 allocation would be
15 consistent with these assets for the various customer classes today. NIPSCO will be
16 filing a rate proceeding in the summer of 2008. While NIPSCO believes that these costs
17 should not be allocated on production demand factors, should the Commission find this
18 approach appropriate the factors should come from that proceeding and in the interim be
19 allocated on a volumetric basis.

20 NIPSCO's proposal is consistent with the relief granted or agreed to for Duke, I&M and
21 Vectren. It is also consistent with the treatment of other power purchases. Furthermore,

1 given the modest impact of the Wind PPA, it is not necessary or appropriate to subject
2 the cost recovery to the more complex allocation methodology proposed by Mr.
3 Dauphinais. Allocating the Wind PPAs in the manner proposed by NIPSCO allocates the
4 cost and benefits of the Wind PPAs across all customer classes in a fair and reasonable
5 manner.

6 **Q7. Do you agree with Mr. Dauphinais (p. 13) that NIPSCO is purchasing wind**
7 **generation capacity under the Wind PPAs rather than fuel?**

8 A7. No, I do not. Wind power is not capacity in the sense that a generation facility provides
9 capacity. The ability of a wind farm to generate electricity is dependent on the weather,
10 not the demand for electricity. While it provides a useful, environmentally friendly
11 supplement to generation facilities, it cannot, by itself, provide a tool to ensure that
12 NIPSCO can meet the reasonable demands of its customers at all times. The Wind PPAs
13 are purchased power, not capacity. This is not altered by the difficulty in identifying a
14 fuel cost associated with wind power. The Commission has long recognized that "it is
15 difficult, and often impossible, to identify the seller's fuel cost included in purchased
16 power transactions." *Investigation of the Treatment of Purchased Power Costs*, Cause
17 No. 41363 p. 5 (IURC 8/18/1999).

18 Furthermore, the Commission should reject Mr. Dauphinais' (p. 13) conclusion that
19 "[r]atepayers should not be captive to the form of payment agreed to by the parties
20 negotiating the contract or by time constraints imposed by the same parties." The
21 Commission should not simply ignore the structure of the Wind PPAs, as Mr. Dauphinais

1 advocates. Structuring these agreements as purchased power brings benefits to
2 customers. Ratepayers will pay no return on the wind turbines and other capital
3 expenditures required to produce the wind. They will incur no expenses if the wind never
4 blows under the Wind PPAs. Had NIPSCO constructed these turbines itself, ratepayers
5 would still pay all expense associated with their maintenance. Mr. Dauphinais is trying
6 to construct a regulatory scheme that garners the benefits of a purchased power
7 arrangement for customers but saddles NIPSCO with the obligations of a capacity
8 purchase. A prime example of this is his suggestion (pp. 11-12) that the cost of
9 obligating the facilities to obtain the level of interconnection required to be deemed a
10 designated network resource from the Midwest ISO should be passed along to NIPSCO
11 in a way that does not impact the per MWh charge under the Wind PPAs. Mr.
12 Dauphinais does not suggest that NIPSCO would be able to seek recovery of this cost and
13 he appears to advocate treating such investment as ratebase rather than an expense.

14 **Q8. Mr. Dauphinais (pp. 3-4) also recommends that additional off-system sales profits**
15 **created by the Wind PPAs should be passed on to ratepayers in the same manner**
16 **the Wind PPAs' costs are passed onto ratepayers. Do you agree with this**
17 **recommendation?**

18 **A8. NIPSCO agrees that all revenues and costs attributable to the Wind PPAs will be passed**
19 **back to ratepayers, including those attributable to off-system sales.**

20 **Q9. Mr. Dauphinais (p. 11) expresses concern that the Wind PPAs are not the least cost**
21 **option for NIPSCO to meet the needs of its native load because NIPSCO could**

1 purchase energy from the Midwest ISO less expensively. Do you agree that
2 NIPSCO should simply purchase power from the Midwest ISO in lieu of entering
3 into the Wind PPAs?

4 A9. No, such a decision would be short sighted. Concern continues to mount about carbon
5 dioxide emissions in the United States. In 2007, federal legislation was proposed that
6 would have required utilities like NIPSCO to generate a percentage of its electricity from
7 renewable resources. The Indiana Legislature has debated similar legislation. While no
8 Federal or State legislation has yet passed imposing a renewable portfolio standard on
9 NIPSCO, it would not be prudent for NIPSCO to ignore the concerns that have driven the
10 proposed legislation. I do not expect the push for increasing reliance on renewable
11 energy to abate. NIPSCO and its customers will be better served by entering into a
12 relatively small amount of long term commitments to purchase wind and other renewable
13 energy at this time. Doing so will enable NIPSCO to gain experience using renewable
14 resources other than hydropower (which NIPSCO is already familiar with).

15 It is also not clear that deciding to purchase energy from the Midwest ISO rather than
16 purchasing wind energy now will turn out to be the least cost option for NIPSCO's
17 ratepayers. Should a renewable portfolio standard be imposed on utilities (by the State or
18 Federal governments), the expected value of renewable energy is likely to increase as the
19 demand outstrips the supply in the short-term. Even if a renewable standard is not
20 imposed in Indiana, the increasing cost of carbon based energy suggests that good
21 portfolio management requires a small percentage of the overall portfolio come from
22 non-carbon sources. Furthermore, a growing number of states have adopted renewable

1 power standards thereby increasing the demand for wind power and ultimately increase
2 the price pressure for such output. The Wind PPAs NIPSCO has entered into qualify for
3 federal tax credits. I described these tax credits in my direct testimony at page 12. These
4 tax credits offer a benefit to Barton and Buffalo Ridge that enables them to offer the wind
5 energy at a lower price. These tax credits were not renewed and future projects may have
6 to increase prices to offset this lost tax credit. Considering these factors, I believe that
7 approval of the Wind PPAs is the least cost option for NIPSCO to comply with the need
8 for utilities to explore using renewable resources to generate electricity.

9 **Q10. What if the Commission disagrees that a least cost standard can be used to justify**
10 **wind energy?**

11 A10. The Commission has independent authority to approve NIPSCO's recovery of these costs
12 under Ind. Code § 8-1-8.8-11 without regard to a least cost standard.

13 **Q11. Have you also reviewed Ms. Smith's Testimony?**

14 A11. Yes, I have.

15 **Q12. Do you agree with her conclusions?**

16 A12. No, I do not. Ms. Smith concludes that the Wind PPAs should be disapproved by the
17 Commission. After noting that additional Indiana wind farms are being constructed, she
18 urges NIPSCO to initiate a new request for proposal. The evidence in this proceeding
19 does not support her conclusion. Ms. Smith's primary concern is the risk of an adverse
20 LMP at the nodes where NIPSCO sells the energy it purchases from Buffalo Ridge and

1 Barton. Mr. Adkins' testimony demonstrates that the future projections continue to
2 support purchases from Buffalo Ridge and Barton over Indiana wind projects.

3 Further, I question whether Indiana alone could support sufficient renewable resources to
4 meet a renewable portfolio standard for all utilities in the state of Indiana. The State
5 Utility Forecasting Group's Indiana Electricity Projections, 2007 Forecast projects
6 Indiana will require just over 140,000 gigawatt hours ("GWh") of electricity by 2020.
7 *See Figure 1-1.* The House of Representatives considered a bill in 2007 that would have
8 required a utility to use renewable resources to supply 15% of its load by 2020. This
9 would mean that Indiana would need to source approximately 21,000 GWh of electricity
10 from renewable resources by 2020. The 2006 Indiana Strategic Energy Plan (p. 4)
11 projects wind could provide the electric capacity of a new baseload power plant within
12 the next ten years. Assuming that is the case, Indiana wind alone will not be sufficient to
13 meet this standard. NIPSCO is committed to Indiana, especially as one of the largest
14 utilities with its headquarters located in northern Indiana. However, NIPSCO believes
15 that it will have to rely on both Indiana and out-side Indiana resources to economically
16 meet its customers' future needs for power.

17 **Q13. Ms. Smith (pp. 8-9) also encourages NIPSCO to become more actively engaged in**
18 **Midwest ISO Interconnection Process Task Force and the Indiana Wind Working**
19 **Group. Is NIPSCO willing to do this?**

20 **A13. NIPSCO is willing to explore these initiatives in more detail and work to identify**
21 **personnel whose participation would be the most meaningful to NIPSCO.**

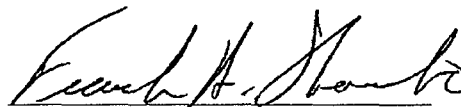
1 **Q14. Does this conclude your rebuttal testimony?**

2 **A14. Yes, it does.**

Exhibit NIPSCO-1R (Shambo)

VERIFICATION

I, Frank A. Shambo, Vice President, Regulatory & Legislative Affairs, for Northern Indiana Public Service Company, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.


Frank A. Shambo

VERIFIED REBUTTAL TESTIMONY OF BRADLEY K. SWEET
DIRECTOR OF GENERATION DISPATCH AND ENERGY MANAGEMENT
NORTHERN INDIANA PUBLIC SERVICE COMPANY
CAUSE NO. 43393

1 **Q1. Please state your name and business address.**

2 A1. My name is Bradley K. Sweet. My business address is 1500 165th Avenue, Hammond,
3 Indiana 46320.

4 **Q2. Are you the same Bradley K. Sweet that offered verified direct testimony in this**
5 **proceeding?**

6 A2. Yes, I am.

7 **Q3. What is the purpose of your rebuttal testimony?**

8 A3. Ms. Smith and Mr. Dauphinais express concerns about the locational marginal pricing
9 ("LMP") differential potentially adversely affecting the costs Northern Indiana Public
10 Service Company's ("NIPSCO") ratepayers will incur under the purchase power
11 agreements NIPSCO has entered into with Buffalo Ridge I LLC ("Buffalo Ridge") and
12 Barton Windpower LLC ("Barton") to acquire wind power (the "Wind PPAs"). Both
13 raise specific concerns they imply will adversely impact the LMP. I will first respond to
14 Mr. Dauphinais' assertions that NIPSCO must deliver the wind power to NIPSCO's
15 service territory. I will also address Ms. Smith's concerns about the quantity of wind
16 power proposed in the area where Buffalo Ridge and Barton are located. Finally, I will
17 address Mr. Dauphinais' suggestion that NIPSCO should have sought the right for
18 Buffalo Ridge and Barton to become designated network resources ("DNRs").

1 **Q4. Mr. Dauphinais (p. 5) describes the significance of the LMP in determining the cost**
2 **of the Wind PPAs to ratepayers. Do you agree with his analysis?**

3 A4. No, I do not. I agree with Mr. Dauphinais that during a given hour, NIPSCO's ratepayer
4 will be charged the difference between the LMP at the NIPSCO load zone and the LMP
5 at Barton or Buffalo Ridge. As the energy cost is the same at both locations, the
6 difference is the cost for transmission congestion and marginal transmission losses
7 between both locations. I disagree, however, that this differential represents the cost to
8 move power from Buffalo Ridge and Barton to NIPSCO's native load.

9 **Q5. What is an LMP?**

10 A5. LMP is a single price (made up of three components - energy, congestion, and losses)
11 reflecting the marginal value of energy at a location.

12 **Q6. Please explain the relevance of LMP to the Wind PPAs.**

13 A6. NIPSCO will acquire energy from Buffalo Ridge and Barton at the price set forth in the
14 Wind PPAs and recover this cost from NIPSCO ratepayers as fuel through its fuel
15 adjustment clause. Ratepayers will also be charged the difference between the NIPSCO
16 load LMP and the LMP then prevailing at the node serving Buffalo Ridge and Barton in
17 the same manner that NIPSCO treats its load and its generation.

18 **Q7. Isn't the LMP designed to reflect congestion?**

19 A7. I agree that LMP is designed to reflect congestion in an area. However, this does not
20 mean that it is designed to price the cost of transmitting power from one part of the
21 Midwest Independent Transmission System Operator ("Midwest ISO") footprint to
22 another. LMP reflects constraints on the transmission system. If there are more

1 generators on-line in an area than is necessary to meet the load and transmission is not
2 available to deliver that power to an area where it is needed, the LMP will be lower to
3 encourage generators to reduce their output.

4 **Q8. Do you agree with Mr. Dauphinais that LMP can be volatile?**

5 A8. I agree with Mr. Dauphinais that the LMP is constantly changing to send price signals to
6 the market and that the constant change will result in the LMP difference between any
7 two nodes changing regularly. I disagree that this should weigh against NIPSCO's
8 purchase of wind from Buffalo Ridge and Barton. Duke Energy Indiana, Inc. ("Duke")
9 and Southern Indiana Gas and Electric Company ("Vectren South") are purchasing wind
10 energy from Benton County Wind Farm, LLC ("Benton County"). Benton County is
11 interconnected with NIPSCO's transmission service. Like NIPSCO, Vectren South and
12 Duke will be purchasing wind from Benton County and selling it into the following
13 nodes: NIPS.BENCO.SIG and NIPS.BENCO.DUK, respectively. Vectren South and
14 Duke will supply their load from a different node. Volatility in the LMPs at different
15 nodes will affect Vectren South and Duke, just as it will affect NIPSCO.
16 Notwithstanding this similarity, the Commission approved both Vectren South's and
17 Duke's purchases from Benton County.

18 **Q9. Is there likely to be less volatility in the LMP because both nodes are in Indiana?**

19 A9. Not necessarily. LMP differences are caused by constraints and losses on the
20 transmission system that can occur anywhere.

21 **Q10. Ms. Smith notes that while 22,000 megawatts ("MW") of wind generation have**
22 **requested interconnection to the Midwest ISO in the Buffalo Ridge, South Dakota**

1 **area, only 1,900 MW of outlet transmission is planned. Do you agree that**
2 **transmission congestion and related costs will necessarily increase?**

3 A10. No. This assumes that all 22,000 MW of wind generation will be built. As Ms. Smith
4 states in her testimony, in order to connect to the Midwest ISO transmission grid, a
5 project owner must complete a series of studies before a legal agreement, known as an
6 Interconnection Agreement ("IA"), is signed to authorize the transmission connection to
7 the grid. These studies result in a high-level cost estimate for any required transmission
8 upgrades. This includes a detailed timetable of the required upgrades. The final step in
9 the process is the development and signing of the IA between the project owner,
10 transmission owner and the Midwest ISO. The IA contains draft timelines for specific
11 milestones to construct or modify transmission facilities. At some point additional wind
12 facilities will not be built until transmission upgrades are completed. NIPSCO benefits
13 from signing PPAs with parties who already have or soon will have interconnection
14 agreements and therefore will move forward.

15 The Midwest ISO is also evaluating transmission expansion beyond the 1,900 MW of
16 outlet transmission planned in the area of Buffalo Ridge and Barton to specifically
17 address the issue of allowing more generation in this area to serve load to the east
18 (primarily to accommodate wind). The Midwest ISO has stated that the benefits of the
19 transmission expansion exceed the costs. Based upon the current Regional Expansion
20 Criteria and Benefits ("RECB") design, all Midwest ISO market participants, including
21 NIPSCO's ratepayers, would have to pay a share of the costs of the transmission
22 expansion. NIPSCO would receive a direct benefit by seeing less downward pressure on
23 LMPs at Buffalo Ridge and Barton.

1 **Q11. Do you agree with Mr. Dauphinais (p. 5) that the greater the distance of generation**
2 **from NIPSCO load, the greater the likelihood that congestion transmission**
3 **constraints will be encountered on the path from generation to load?**

4 A11. No. NIPSCO is not actually securing transmission rights to deliver this electricity from
5 Buffalo Ridge and Barton to NIPSCO. The LMPs are determined not by the cost to
6 move power from one location to another, but by the Midwest ISO's use of Security
7 Constrained Unit Commitment ("SCUC") which economically commits units to meet bid
8 demand and Security Constrained Economic Dispatch ("SCED") to efficiently dispatch
9 generation within existing Transmission Capacity thereby minimizing Congestion. The
10 Midwest ISO also uses the Reliability Assessment Commitment ("RAC") process to
11 ensure that sufficient resources are available and online to meet the forecasted Midwest
12 ISO load for each hour of the next operating day.

13 I similarly disagree with his conclusion (pp. 5-6) that any transmission reinforcements
14 constructed to mitigate those constraints will be greater in length and, thus, greater in cost
15 because of the proximity of Buffalo Ridge and Barton to NIPSCO. The length of a
16 constraint is not the distance between the injection and withdrawal point. The constraint
17 may not be a line at all but maybe a transformer or even as small as a current transformer
18 on a breaker. Congestion may be resolved by switching out a small length of
19 transmission line, replacing a transformer or breaker, or other change on the transmission
20 system.

21 **Q12. What is Mr. Dauphinais' position on financial transmission rights ("FTRs")?**

22 A12. I agree with Mr. Dauphinais contention that NIPSCO cannot currently nominate an

1 allocation of FTR's for the Wind PPAs because they are not currently DNRs. He glosses
2 over the fact, however, that even if the wind projects can be DNR, only a small
3 percentage of the connected capacity could be nominated due to the intermittent nature of
4 wind. Mr. Dauphinais on one hand states that NIPSCO did not explore obtaining FTRs
5 from the Midwest ISO auction for the wind power but then acknowledges FTRs would
6 not be an effective long-term hedge. I think he is agreeing with NIPSCO's decision not
7 to pursue FTRs for this wind power. FTRs obtained through an auction are typically
8 obtained at a cost. NIPSCO would need to bid for these at a price that would be below
9 the value of FTRs congestion rents in order to receive any benefit from FTRs obtained
10 through the auction. By bidding below the expected value of the congestion rents, there
11 is a strong possibility of not clearing in the auction.

12 **Q13. Mr. Dauphinais suggests NIPSCO should have contracted for Barton and Buffalo**
13 **Ridge to be designated as network resources for NIPSCO so that NIPSCO can take**
14 **credit for some of the capacity attributes of the facilities. Do you agree with his**
15 **suggestion?**

16 **A13.** No, I do not. Most wind providers do not request Network Resource Interconnection
17 Service due to the additional costs for transmission upgrades above those required for
18 Energy Resource Interconnection Service. The additional transmission upgrades are for
19 the entire connected capacity of the project, but wind farms receive only a small
20 percentage of the connected capacity as a capacity resource due to the intermittent nature
21 of wind generation. In other words, the cost to one wind provider is not recovered by that
22 one wind provider. If the Midwest ISO requires transmission upgrades whose costs are
23 shared across many providers, Network Resource Interconnection Service requests may

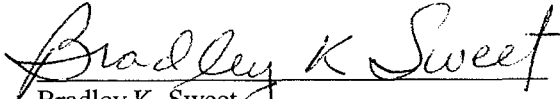
1 increase.

2 **Q14. Does that conclude your rebuttal testimony?**

3 A14. Yes.

VERIFICATION

I, Bradley K. Sweet, Director of Generation Dispatch and Energy Management for Northern Indiana Public Service Company, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.


Bradley K. Sweet

VERIFIED REBUTTAL TESTIMONY OF CHARLES F. ADKINS

VICE PRESIDENT, CONSULTING

NEWENERGY ASSOCIATES, LLC

CAUSE NO. 43393

1 **Q1. Please state your name, job title, employer and business address.**

2 A1. My name is Charles F. Adkins. I am a Vice President in the Consulting Practice of
3 NewEnergy Associates, LLC ("NewEnergy"). My business address is 3301 Windy
4 Ridge Parkway, Suite 200, Atlanta, Georgia 30339.

5 **Q2. Are you the same Charles Adkins that provided Direct Testimony in this**
6 **proceeding?**

7 A2. Yes, I am.

8 **Q3. What is the purpose of your rebuttal testimony?**

9 A3. Indiana Office of Utility Consumer Counselor ("OUCC") witness Barbara A. Smith and
10 NIPSCO Industrial Group witness James R. Dauphinais criticize the analysis used by
11 Northern Indiana Public Service Company ("NIPSCO") to rank the various proposals to
12 acquire energy generated by wind turbines NIPSCO received in response to its request
13 for proposals ("RFP"). Specifically, these witnesses criticize NIPSCO's use of historical
14 locational marginal pricing ("LMP") data to project future LMPs and conclude NIPSCO
15 should have used projected LMPs provided by the Midwest Independent Transmission
16 System Operator ("Midwest ISO"). My testimony explains why NIPSCO used historical
17 LMP, discusses the analysis I performed to evaluate projected LMPs and addresses the
18 conclusions that result from this analysis. In sum, even with the inclusion of projected

1 LMPs from the Midwest ISO, I still believe that NIPSCO should pursue the out-of-state
2 wind options over the Indiana wind options. The analysis Mr. Dauphinais and Ms. Smith
3 urged NIPSCO to perform substantiates NIPSCO's decision. Consequently, I disagree
4 that NIPSCO needs to initiate a second RFP to reflect the availability of new Indiana
5 wind. I also address Mr. Dauphinais' suggestion that NIPSCO should ignore the clamor
6 for using renewable resources and simply purchase power from the Midwest ISO.

7 **Q4. What role did you play in NIPSCO's analysis of the proposals for the acquisition of**
8 **wind power?**

9 A4. NIPSCO retained NewEnergy to manage the integration of Demand-Side, Self-Build
10 Supply-Side, and Market options into NIPSCO's 2007 Integrated Resource Plan ("IRP").
11 The acquisition of wind power was a sub-component of the Market options. I was
12 charged with the management of these projects by NewEnergy.

13 **Q5. Do you agree with Ms. Smith and Mr. Dauphinais that LMPs are relevant to**
14 **NIPSCO's proposed purchase of wind power?**

15 A5. Yes. NIPSCO will purchase wind power from Buffalo Ridge I LLC ("Buffalo Ridge")
16 and Barton Windpower LLC ("Barton") and sell it into the Midwest ISO market for the
17 prevailing LMP at the node nearest Barton and Buffalo Ridge. An equal amount of
18 power will be purchased from the Midwest ISO at the NIPSCO load zone at the
19 prevailing LMP price at this node. The difference between the LMP at the nodes serving
20 Barton and Buffalo Ridge and the LMP at the node serving the NIPSCO load zone
21 represents a cost or benefit that is a relevant consideration to the economics of the wind
22 power. I recommended that NIPSCO evaluate the LMP differentials to ensure that any

1 potential costs associated with LMP differences did not affect the relative economic
2 ranking of Indiana wind versus the Barton/Buffalo Ridge wind projects.

3 **Q6. Did you account for LMPs in your original analysis?**

4 A6. Yes. The proposals for wind power were modified to include the LMP differential to
5 reflect the potential cost or benefit of each provider's unique location. NewEnergy
6 calculated this differential by computing a "round the clock" average day ahead LMP for
7 each proposed delivery point using historical data, compiled from the Midwest ISO for
8 2006, with an LMP differential calculated between the delivery point LMP and
9 comparable LMP for NIPSCO's Load Zone. A positive differential reflected a benefit,
10 and was included as a fixed annual revenue payment; a negative differential reflected a
11 cost and was included as a fixed annual expense. No hedging strategies were assumed
12 for the wind providers because the providers who provided bids to NIPSCO did not
13 qualify as Designated Network Resources ("DNR") under Midwest ISO rules.

14 **Q7. Do you agree with Mr. Dauphinais (p. 7) and Ms. Smith (p. 7) that using one year's**
15 **worth of historical day-ahead LMP data is inadequate for estimating the congestion**
16 **risks associated with the proposed acquisition of wind power?**

17 A7. No, I do not. An ideal approach would use both a historical perspective and a model
18 projecting future costs, *i.e.* a fundamental model. Many other utilities and marketers use
19 both tools to evaluate LMP. At the time NewEnergy was evaluating the wind proposals,
20 no fundamental models were readily available to NIPSCO that would project LMP
21 prices. We elected to use the historical data that was available at that time. This data

1 consisted of 2006 Historical LMPs that were based on a full year of Midwest ISO LMP
2 operations.

3 **Q8. Did you consider using projected LMP data at the time of your original analysis?**

4 A8. Yes. At the time we were evaluating the wind proposals, we were not aware of any
5 fundamental models readily available to project congestion. The effort required to
6 develop a fundamental model is not trivial. Some of the more significant tasks associated
7 with developing a fundamental model include developing an integrated resource plan for
8 the entire Midwest ISO system, siting future generating resources, and developing a
9 transmission expansion plan. The Midwest ISO recently released their MTEP08
10 fundamental model and that was the result of significant time and effort on the part of the
11 Midwest ISO and the stakeholders.

12 **Q9. Do you agree with Ms. Smith (p. 8) that NIPSCO should have considered the**
13 **volatile transmission congestion costs as part of the RFP results prior to any**
14 **negotiations?**

15 A9. Yes, and NIPSCO did exactly that. While the RFP only made a requirement for bidders
16 to provide a proposal that offered delivery to a Midwest ISO commercial pricing node,
17 one of the non-economic evaluation parameters was the potential congestion associated
18 with the delivery point. Under the terms of the RFP, a proposal's rates, terms, charges or
19 prices had to include any and all costs that NIPSCO will be required to pay to the bidder.
20 While the bidders were free to include transmission congestion costs, no bidder did.
21 When NIPSCO began negotiations, it approached both the Barton/Buffalo Ridge and the
22 Indiana wind bidders with a request to provide pricing at the NIPSCO Load Zone, thus

1 eliminating transmission congestion risks. Neither party was willing to provide pricing at
2 the NIPSCO Load Zone at that time. Consequently, NIPSCO conducted its own analysis
3 of LMP differentials using the historical data I described above.

4 **Q10. Ms. Smith (p. 7) notes that NIPSCO's consultant analyzed the Renewable Midwest**
5 **ISO future projection information to address the OUCC's concerns about the**
6 **reliability of historical data. Were you the consultant who performed this analysis**
7 **for NIPSCO?**

8 A10. Yes, NewEnergy performed these analyses.

9 **Q11. What is the Renewable Midwest ISO future projection information you used to**
10 **conduct an additional analysis?**

11 A11. NIPSCO requested access the Midwest ISO MTEP08 Reference PROMOD database
12 from the Midwest ISO. The PROMOD database consists of the stakeholder loads,
13 generation, fuel assumptions, expansion units, interconnections, and transmission
14 powerflow. After the Midwest ISO provided this information, NewEnergy used
15 PROMOD to run the database and project LMPs for 2011, 2016, and 2021. In
16 subsequent discussions with the interveners, NIPSCO made a second request for the
17 Midwest ISO MTEP08 Renewable PROMOD database. This database assumes a
18 Midwest ISO renewable resource portfolio standard is imposed on utilities. Again,
19 NewEnergy used PROMOD to run the database and project LMPs for 2011, 2016, and
20 2021. Finally, Mr. Dauphinais requested an additional modification to the analysis to
21 assume additional wind generation was moved from Michigan to the west. NewEnergy
22 incorporated this revised assumption.

Q12. Is this equivalent to the “production cost simulation techniques utilizing a detailed power flow mode” advocated by Mr. Dauphinais?

A12. Yes, it is. I would also like to point out that “production cost simulation techniques utilizing a detailed power flow mode” is the equivalent to the “fundamental model” I previously described.

Q13. What were the results of your analysis using the Renewable Midwest ISO future projection information?

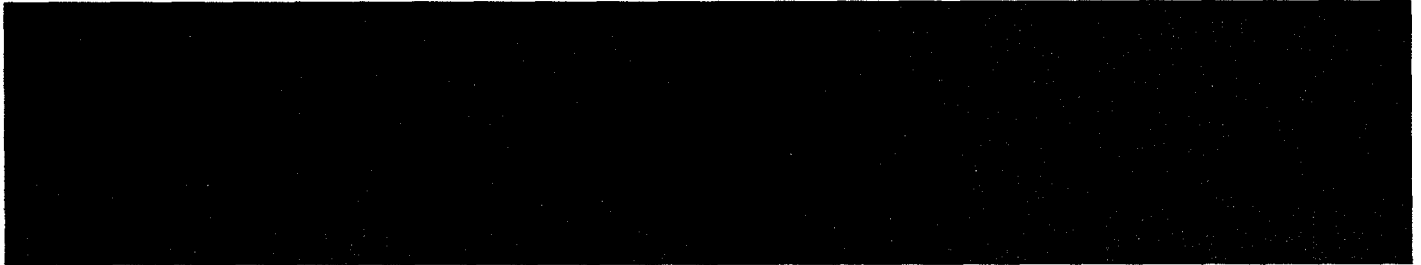
A13. NIPSCO’s 2007 IRP made the recommendation to pursue Out of State Wind on the basis of Net Present Value Utility Costs or incremental revenue requirements. The Net Present Value Utility Cost of the options were as follows:

2007 IRP NPVUC (2007 K\$)	
Out of State Wind	\$10,164,781
No Wind	\$10,195,322
Indiana Wind	\$10,227,570

The Net Present Value Utility Cost analysis showed that Out of State Wind was the least cost option. Using the MISO MTEP08 scenarios, NewEnergy computed a generation weighted average LMP differential for each of the wind delivery points, resulting in the following LMP differentials between the node serving the wind providers and the NIPSCO node:

	2011		2016		LMP Differential (\$/MWh)	
					2011	2016
	MTEP08 Ref.	MTEP08 Ref	MTEP08 Ren	MTEP08 Ren	2011 MTEP08 Modified Renewable	2016 MTEP08 Modified Renewable
	Gen. Wgt. Average	Gen. Wgt. Average	Gen. Wgt. Average	Gen. Wgt. Average	Gen. Wgt. Average	Gen. Wgt. Average
Barton	12.00	13.44	13.51	34.36	15.93	34.52
Buffalo Ridge	8.08	12.79	8.31	12.28	9.26	12.57
Indiana Wind	0.37	-20.66	0.94	11.95	0.94	12.64

1 In all cases and years, except one, the economic savings of selecting Barton and Buffalo
2 Ridge over Indiana wind are maintained and the analysis I have performed shows that
3 the transmission congestion risk is unlikely to jeopardize these savings.

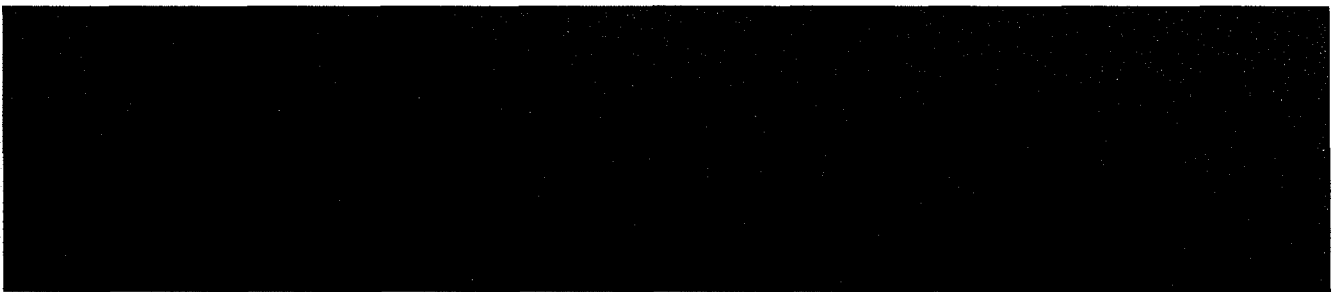


4
5 **Q14. Do you have any concerns with the analysis using the Renewable Midwest ISO**
6 **future projection information?**

7 A14. Yes. The Renewable Midwest ISO future projections do not represent a reasonable
8 representation of the future Midwest ISO system. Instead, they represent a rather
9 conservative case. First and foremost, there were no modifications to the transmission
10 power flow between the MTEP08 Reference and MTEP08 Renewable cases. This
11 indicates that the Midwest ISO did not consider any future transmission enhancements to
12 alleviate congestion. This paints a very conservative view of the future, in which a
13 significant amount of renewable resources are added to the western region of the
14 Midwest ISO with no corresponding transmission enhancements. Second, the renewable
15 case assumes a renewable portfolio standard across the entire Midwest ISO footprint that
16 results in even more wind generation located in the west. I would consider the MTEP08
17 Renewable case to be an upper bound.

18 **Q15. Having conducted the analysis Ms. Smith and Mr. Dauphinais requested, did the**
19 **results persuade you NIPSCO made the wrong decision?**

1 No, to the contrary. The additional analysis continued to support NIPSCO's plan to
2 purchase wind from Buffalo Ridge and Barton. NewEnergy's original analysis
3 demonstrated that in 2009, the generation weighted average price of the Barton/Buffalo
4 Ridge wind projects was [REDACTED] \$/MWh and the price of Indiana wind was [REDACTED] \$/MWh.
5 This represented a significant advantage of the Barton/Buffalo Ridge projects of 18.87
6 \$/MWh. NewEnergy's analysis using both 2006 Historical LMP differentials and using
7 MISO MTEP08 Projected LMP differentials confirms that Barton/Buffalo Ridge's
8 advantage exist after factoring in the LMP differentials. In the following table, I have
9 enumerated the savings to NIPSCO's ratepayers from selecting Barton/Buffalo Ridge
10 over Indiana wind. The source of this information is Mr. Dauphinais' Exhibit JRD-2. In
11 all cases and years, except one, NIPSCO's ratepayers will save money with the selection
12 of Barton and Buffalo Ridge over Indiana wind.



13
14 **Q16. Do you agree with Ms. Smith that "future LMP will only continue to increase in the**
15 **upcoming years and therefore . . . the historical analysis inadequate?"**

16 **A15.** Not entirely. While I do believe that the underlying economics (inflation, fuel escalation,
17 etc.) will cause future LMPs to increase in the upcoming years, I do not agree with the
18 inference that congestion will increase simply because LMPs increase. The key point
19 here is congestion and while the OUCC may believe the congestion will continue to

1 increase over time, there is simply no data to support that conclusion. Congestion may
2 increase or decrease. The purpose of an LMP dispatch is to identify economic incentives
3 to correct congestion. To make the statement that congestion will always increase
4 assumes a premise that transmission investment will not be made to relieve transmission
5 constraints. More importantly, NIPSCO instructed NewEnergy to conduct an analysis
6 using projected LMPs to test whether this congestion would support Ms. Smith's position
7 that acquiring wind from an Indiana wind provider would be a lower cost to Indiana
8 ratepayers because it would alleviate this congestion. The analysis shows the out of state
9 wind continues to offer better economics to NIPSCO's ratepayers.

10 **Q17. Do you agree with Mr. Dauphinais' (p. 10) statement that "more importantly, the**
11 **per MWh cost of both the Wind PPAs and Indiana wind facilities, including**
12 **congestion costs, is projected to exceed the project per MWh cost to purchase MISO**
13 **at the NIPSCO load zone".**

14 A16. No. I do not. Mr. Dauphinais is comparing apples to oranges. He has inappropriately
15 compared the LMPs from the MTEP08 case to NIPSCO's 2007 IRP projected costs.
16 Before such a comparison can be made, it would be necessary to ensure consistency
17 between the two studies underlying assumptions (i.e., inflation, fuel prices, construction
18 costs, operating efficiency, etc.). Furthermore, the goals and objectives of NIPSCO's
19 2007 IRP do not stop at the "least cost option". Mr. Dauphinais suggests NIPSCO should
20 simply buy power rather than trying to address the broader goals set forth in its 2007 IRP.
21 The recommendation of the NIPSCO's 2007 IRP is based on least cost and risk adjusted
22 least cost. By risk adjusted least cost, I am specifically referring the price stability,
23 minimization of market volatility, and diversity of fuel. The Wind PPAs do offer risk

1 mitigation on a number of fronts. First, the Wind PPAs offer fuel risk mitigation.
2 Second, the Wind PPAs offer energy market risk mitigation. Third, the Wind PPAs offer
3 risk mitigation against future renewable portfolio standard requirements. Fourth, the
4 Wind PPAs offer risk mitigation against future environmental regulations.

5 **Q18. Do the recommendations of Mr. Dauphinais or Ms. Smith incorporate all of the**
6 **economic value of the wind proposals?**

7 A17. No. The analysis NewEnergy performed in response to their concerns did not account for
8 the renewable energy credits ("RECs") NIPSCO will receive under the Wind PPAs. The
9 NPV value of REC's are \$9,833,000 (2007 \$) for Barton and Buffalo Ridge. This is
10 based on a current price for RECs of 3.00 \$/MWh escalated at CPI. This would represent
11 a conservative estimate based upon current market dynamic. The imposition of an
12 Indiana or Federal Renewable Portfolio Standard would greatly enhance the value of
13 these RECs.

14 **Q19. Do you agree with Ms. Smith that NIPSCO should initiate a new request for**
15 **proposal to solicit energy from a selection that includes new wind development?**

16 A18. Absolutely not. First, NIPSCO's experience in its RFP is that prices are rising. In the
17 course of negotiations with both the out of state and Indiana wind providers, both entities
18 requested a price increase to cover the recent rise in construction costs. On the
19 equipment and materials costs, power transformers have increased 11%, line transformers
20 have increased 32.9%, overhead conductor transmission prices have increased 64.9%,
21 overhead conductor distribution prices have increased 15.3%, underground conductor
22 distribution prices have increased 33.5%, cement prices have increased 8.1%, and steel

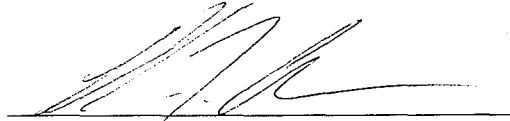
1 prices have increased 5.3% as of September 2007. Canceling these wind proposals and
2 re-issuing a new RFP will only result in higher costs. Second, Ms. Smith's
3 recommendation implies that wind farms located close to the native loads would be a
4 better economic choice. However, NIPSCO's analysis demonstrates that Indiana wind
5 carries a premium of 18.87 \$/MWh. Re-issuing an RFP simply to attract more Indiana
6 wind appears likely to result in higher costs to NIPSCO's ratepayers. Finally, NIPSCO's
7 reputation must be taken into consideration. The business actions of issuing and
8 canceling RFPs, without merit, will result in NIPSCO being viewed as unreliable within
9 the market place because bidders will have no confidence that their investment in
10 developing a qualified proposal will ultimately provide any return. A bad reputation may
11 cause some bidder's to not respond because of the uncertainty and may result in higher
12 prices as bidder's attempt to price in the uncertainty. Canceling these Wind PPAs and
13 reissuing another RFP will only result in higher costs.

14 **Q20. Does this conclude your prefiled rebuttal testimony?**

15 **A19. Yes, it does.**

VERIFICATION

I, Charles F. Adkins, Vice President, Consulting of NewEnergy Associates, LLC, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.


Charles F. Adkins

Date: April 10, 2008

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing has been served this 11th day of April, 2008, by deposit in the United States mail, first-class postage prepaid to:

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