BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application for a Certificate of Public Convenience and Necessity to Construct and Place in Service a Wind Turbine Electric Generation Facility Known as the Glacier Hills Wind Park in Columbia County, Wisconsin	)))))	Docket No. 6630-CE-302

DIRECT TESTIMONY OF JONATHAN WALLACH

ON BEHALF OF THE CITIZENS UTILITY BOARD OF WISCONSIN

I. Introduction and Summary

Q: Please state your name, occupation, and business address.

A: My name is Jonathan F. Wallach. I am Vice President of Resource Insight, Inc., 5 Water Street, Arlington, Massachusetts.

Q: Please summarize your professional education and experience.

A: I have worked as a consultant to the electric-power industry since 1981. From 1981 to 1986, I was a research associate at Energy Systems Research Group. In 1987 and 1988, I was an independent consultant. From 1989 to 1990, I was a senior analyst at Komanoff Energy Associates. I have been in my current position at Resource Insight since September of 1990.

Over the last twenty-eight years, I have advised clients on a wide range of economic, planning, and policy issues including: electric-utility restructuring; wholesale-power market design and operations; transmission pricing and policy; market valuation of generating assets and purchase contracts; power-

procurement strategies; integrated resource planning; cost allocation and rate design; and energy-efficiency program design and planning. On a number of occasions, I have assisted clients in the purchase or sale of both non-renewable and renewable power through Requests for Proposals or structured negotiations.

My resume is attached as Exhibit 200 (JFW-1).

Q: On whose behalf are you testifying?

A: I am testifying on behalf of the Citizens Utility Board (CUB).

Q: What is the purpose of your testimony?

A: On October 24, 2008, Wisconsin Electric Power Company (WEPCO or "the Company") filed an Application for a Certificate of Public Convenience and Necessity (CPCN) for the Glacier Hills Wind Park (Application) to the Public Service Commission of Wisconsin (PSCW).[1] In support of its Application, WEPCO assessed potential renewable supply alternatives as proposed by respondents to a Request for Proposals (RFP) issued by the Company in October of 2007. In addition, the Company conducted a number of model runs using the Electric Expansion Generation Analysis System (EGEAS) in support of its Application. Then, on May 29, 2009, the Company filed supplemental direct testimony with revised cost estimates for Glacier Hills, along with updated EGEAS simulations incorporating these revised cost estimates and other changes to modeling assumptions. This testimony evaluates the Company's Application and supplemental testimony, including its consideration of supply alternatives to, and EGEAS modeling of, the Glacier Hills proposal.

[1]This Application was subsequently amended several times over the following two months. The Company then filed direct testimony in support of the Application on March 11, 2009.

In addition, on April 16, 2009, Invenergy Wind LLC filed direct testimony in this proceeding in support of a proposed alternative to the Glacier Hills project. This testimony also addresses the Invenergy proposal.

Q: Please summarize your findings and conclusions.

A: Wisconsin Electric has not shown that the Glacier Hills proposal serves the public interest. It appears at this point in time that there will be no need for Glacier Hills when it enters service in 2012, either to meet planning-reserve requirements or to comply with the requirements of the Renewable Portfolio Standard. The Company's supplemental filing pushes back the need date for new renewable supply to 2013. However, since that filing, the Company has twice lowered its load forecast; the Company may find that Glacier Hills is no longer needed in 2013, once it updates its needs assessment to reflect its current load forecast.

In addition, the Company failed to establish through its RFP that Glacier Hills was economically superior to the projects offered in response to the RFP. The process for evaluating responses to the RFP was apparently haphazard, lacked a systematic basis for ranking responses against each other or against the Glacier Hills project, and [redacted]. Moreover, the Company lacked a reasonable basis for its decision to not consider proposals for Purchase Power Agreements (PPA) in response to its RFP. As a result, WEPCO rejected a number of wind PPA proposals that at the time appeared less expensive and less risky than the Company's proposed investment in Glacier Hills. Ultimately, WEPCO selected Glacier Hills over the RFP alternatives not because of favorable economics or other attributes, [redacted]

[redacted]

[redacted]

The Company has also not shown with its EGEAS modeling that Glacier Hills is the preferred option for meeting RPS requirements. The Company apparently did not model any of the RFP proposals in EGEAS as alternatives to Glacier Hills. Nor did the Company allow any of the generic renewable technologies modeled in EGEAS to compete against Glacier Hills in the EGEAS simulations. Consequently, these EGEAS simulations show the cost impact of adding Glacier Hills to meet the Company's RPS requirement, but do not provide any guidance as to whether Glacier Hills is the least-cost option for meeting that requirement.

Finally, like the PPA proposals submitted in response to the RFP, the Invenergy proposal appears to be a potentially viable alternative to Glacier Hills. Although Glacier Hills appears to be the lower-cost option under the Company's revised forecast for Glacier Hills cost and performance, the Invenergy proposal offers several risk-mitigation benefits. Specifically, under the pricing terms proposed for the Invenergy PPA, ratepayers will not bear any of the [redacted] associated with the Glacier Hills investment. The Invenergy proposal merits further consideration and economic evaluation by the Company.

Q: How should the Company proceed in the event that the Commission rejects the CPCN application?

A: If the Commission rules against the Company, it should direct WEPCO to issue a new RFP for renewable assets or contracts as a replacement for the Glacier Hills project. With the need date for new renewable supply delayed to 2013, there should be sufficient time for the Company to complete the solicitation,

evaluation, and selection process and for winning bidders to complete development and construction of their renewable projects by the need date.

Given the problems with the earlier RFP, this new RFP should be either managed or monitored by an independent third party retained by the Commission. Alternatively, the Commission should direct the Company to work collaboratively with other parties and Commission staff to develop an RFP and evaluate responses.

II. The Glacier Hills Wind Project

Q: Please describe the Glacier Hills project.

A: According to the Technical Support Document (TSD) for the Application, WEPCO is seeking CPCN approval for the installation of 90 wind turbines with a maximum capacity of 207 MW at a site located in Columbia County, Wisconsin. This site, along with certain easements and permits, was optioned from Florida Power and Light in October of 2007. The Company anticipates commercial operation to begin in December of 2011.

According to the TSD, WEPCO is considering five different turbine designs from four vendors, ranging in size from 1.5 MW to 2.3 MW.[2] Thus, the total capacity for the proposed 90-turbine facility would range from 135 MW to 207 MW, depending on the turbine eventually selected for installation.

The Company originally estimated a project investment cost, exclusive of AFUDC, of $526 million for a 207 MW facility, or about $2,539/kW.[3] In its supplemental testimony, the Company lowered its estimate of the construction

[2] TSD, Table 2.2-1, p. 38.

[3] TSD, Table 1.6-1, p. 25.

cost for a 207 MW facility by about 21% to $415 million, or about $2,005/kW.[4] The Company estimates approximately $21 million for AFUDC, for a total capital-cost estimate of about $436 million.[5]

The supplemental testimony also indicates that the Company has entered into an agreement with Vestas to purchase up to 90 V90-1.8 MW turbines, for a total capacity of 163 MW.[6] The Company currently estimates a construction cost, exclusive of AFUDC, of $364 million for a facility with 90 Vestas turbines, or about $2,231/kW.[7]

Q: Given the agreement with Vestas, is the Company still seeking CPCN approval for a facility with the other turbine designs?

A: Yes. According to Company witness Richard O'Conor, the Company is still seeking approval for a facility that makes use of these other turbine designs "in order to preserve optionality (e.g. if unforeseen circumstances arise)."[8]

III. Need for Glacier Hills Capacity

Q: Please summarize the Company's current forecast of capacity requirements.

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[4] *Supplemental Direct Testimony of Stephen R. Jones*, PSCW Docket No. 6630-CE-302, May 29, 2009, Ex. 6, Table 1.6-1.

[5] *Id.*

[6] *Supplemental Direct Testimony of Richard E. O'Conor*, PSCW Docket No. 6630-CE-302, May 29, 2009, p. 218.

[7] Company response to 2-CUB/Inter-1.

[8] *Supplemental Direct Testimony of Richard E. O'Conor*, PSCW Docket No. 6630-CE-302, May 29, 2009, p. 218.

A: According to the response to 4-CUB/Inter-5, the Company currently forecasts that its existing generating capacity will exceed by substantial margin the 14.5% minimum planning requirement through 2019 (the last year of the Company's forecast). Thus, the Company does not foresee a need for new capacity to meet planning-reserve requirements until 2020, at the earliest.[9]

Q: Has the Company taken any steps to address this problem of persistent excess capacity?

A: Yes. According to the response to 3-CUB/Inter-1, since [redacted], WEPCO has been evaluating market opportunities for off-system sales of excess capacity and energy [redacted]

However, given the expectation that surplus conditions will persist for at least ten years, [redacted], the Company should also investigate whether mothballing or retirement of uneconomic excess, or some combination of off-system sales and mothballing or retirement of excess capacity might provide greater long-term value to ratepayers.

Q: Would the addition of Glacier Hills in 2012 exacerbate this problem of excess capacity?

A: Yes. The Company is currently forecasting substantial excess capacity on its system without consideration of the addition of new renewable capacity. Adding Glacier Hills to the supply mix will enlarge the surplus by 163 MW and further delay the need for new capacity for the purposes of meeting planning-reserve requirements.

[9] Although the Company's forecast ends in 2019, simple extrapolation of the forecast data indicates that the capacity surplus may continue into the following decade.

Q: Why, then, is the Company seeking approval to place Glacier Hills in service by 2012?

A: When WEPCO first filed its CPCN application in October of 2008, the Company was forecasting a need for new renewable capacity starting in 2012 in order to comply with the requirements of the Renewable Portfolio Standard. Specifically, Table 1.3-1 of the TSD indicated that the Company could meet its RPS requirement through 2011 by relying on its existing renewable portfolio in combination with its inventory of banked Renewable Resource Credits (RRC). However, starting in 2012, the Company was forecasting a growing compliance shortfall, as the RPS requirement increased over time and as the Company depleted its inventory of RRCs.

Q: Is the Company currently forecasting a shortfall starting in 2012?

A: No. Based on a load forecast completed at the end of 2008, and accounting for changes in its renewable portfolio since it filed the CPCN application, the Company is now forecasting that it will not fall short of the RPS requirement until 2013.[10]

Q: Is there reason to believe that the need date for new renewable capacity could be delayed beyond 2013?

A: Yes. The Company apparently has reduced its forecast of customer load two times since the December 2008 forecast, once in July of 2009 in Docket No. 05-UR-104 and then again in September of 2009 as part of the Strategic Energy Assessment in Docket No. 05-ES-105. These reductions in forecasted energy requirements lead to proportionate reductions in forecasted RPS requirements,

[10] See the response to Request for Additional Information PSC-RAI-07.02(e). This response provides a revised version of Table 1.3-1 that shows 2013 to be the first year when there is a compliance shortfall.

since, by statute, the RPS requirement in any year is a fixed percentage of energy requirements. Any reduction in forecasted RPS requirements, in turn, could affect when new renewable supply is needed. As a result, the Company may find that Glacier Hills is no longer needed in 2013, once it updates its needs assessment to reflect its current load forecast.

IV. The 2007 Request for Proposals

Q: Please describe the 2007 RFP for renewable resources.

A: On October 12, 2007, the Company issued an RFP for renewable generation projects of up to 200 MW. The RFP stipulated that proposals must be powered by wind, biomass, solar energy, or hydro power. The RFP also required all new facilities to start commercial operation by January 1, 2011, and all existing facilities to have entered service no earlier than January 1, 2004.[11] Finally, the RFP stated that proposals must be for the sale of the facilities to WEPCO, not for the sale of the output of the facilities through a purchased-power agreement.

Q: Why did the Company exclude consideration of PPA proposals?

A: In response to 2-CUB/Inter-6, the Company offered two reasons for excluding consideration of PPA proposals. First, the Company stated that it was seeking a "diverse renewable portfolio" that included utility-built assets, turn-key purchases of non-utility facilities, and purchased-power contracts. Second, the Company asserted that the "market for renewable purchased power has not been as robust or reliable as purchased power generally," and cited as evidence the fact that "the awarding of a PPA to a company which failed to perform led the company into the need to construct its first wind facility, Blue Sky/Green Field."

[11] This cut-off for existing facilities is mandated under 2005 Wis. Act 141.

Q: Are these valid reasons for rejecting PPA proposals out of hand?

A: No. The Company has not offered any evidence indicating that its renewable portfolio would be any less "diverse" if it procured purchased-power contracts instead of turn-key facilities through the RFP, or that any particular proportion of contracts in its renewable portfolio exposes the Company to undue risks. Indeed, with the addition of the Blue Sky/Green Field facility in 2008, utility-owned assets now represent almost 70% of the Company's renewable capacity.[12]

Nor is the fact that the Company experienced problems with a single contract compelling evidence that the market for renewable contracts is not robust or a valid reason for foregoing renewable purchases in the future. The fact that WEPCO and other utilities across North America have successfully contracted for renewable power would appear to indicate otherwise.

Q: What are the potential advantages of a PPA for the output of a renewable project compared to utility ownership of a renewable project?

A: Power-purchase agreements for renewable resources typically offer pricing terms that fix the starting price of power supply and then specify the annual rate or index for escalating the starting price over the term of the contract. As a result, such agreements could mitigate price and cost risks from

- unanticipated increases in construction costs prior to commercial operation;
- higher-than-forecast O&M costs and ongoing capital expenditures over the service life of the asset; and

[12] According to Section 1.3.2.1 of the TSD, utility-owned assets comprise 220 MW, or 69%, of the Company's renewable portfolio as of 2008.

- poor performance.[13]

Q: What was the response to the RFP?

A: In response, the Company received nine proposals, representing twelve projects: eight wind, two solar-electric, one biomass, and one demand-side.

Q: Please describe the process for evaluating responses to the RFP.

A: The Company undertook an initial screening of the twelve project proposals to determine whether they met certain threshold criteria.[14] These criteria included [redacted] Proposals were also apparently subjected to some form of economic review during this initial screening, judging from the fact that certain proposals were rejected because they were not competitively priced. However, WEPCO has not provided any documentation regarding the nature or outcome of this analysis.[15]

The proposals that survived the initial evaluation were then subject to a more detailed review process. The RFP evaluation team obtained additional information regarding the "shortlisted" project proposals, met with the

[13] A PPA may mitigate the risk of poor performance because the buyer pays only for the power generated by the renewable facility. In addition, the contract may provide performance guarantees that mitigate the cost to the buyer of replacement power to cover any shortfall from guaranteed output levels.

[14] These criteria were specified in an internal company document entitled "Fatal Flaw Review Criteria for Renewable RFP 2007 Applicants," provided in response to 1-CUB/RFP-5.

[15] In 2-CUB/RFP-9, CUB requested documentation of the economic analyses supporting the conclusion that the rejected proposals were not cost-competitive. In response, the only documentation offered by the Company consisted of summary descriptions of the various responses to the RFP, summary tables comparing certain attributes of the various responses, and hand-written notes by WEPCO staff that reviewed the proposals.

shortlisted respondents, and then developed summary data regarding key attributes for each of the project proposals for presentation to Company management.

Q: Which proposals did not survive the initial evaluation process?

A: Six of the twelve projects were rejected as a result of the initial screening process. The two solar-electric proposals were "dismissed as not cost competitive with the wind projects."[16] The demand-side project was rejected because it did not produce renewable energy. [redacted]

Q: Did the Company apply the initial screening criteria consistently?

A: No. [redacted] The Company has not provided any documentation regarding [redacted] or of any

[16] TSD, p. 15.

[17] [redacted]

correspondence with the project proponent [redacted]

Likewise, some time after having received its letter of rejection, [redacted]

The Company apparently also applied its economic screening criteria inconsistently. While WEPCO rejected the solar proposals as too costly relative to wind, [redacted]

Q: Did the offer prices for the rejected PPA proposals appear competitive with Glacier Hills at that time?

A: The Company has not divulged whether it had estimated the cost for the Glacier Hills project, or whether it had compared any such estimate against the PPA price offers, by the time it rejected the PPA proposals at the start of 2008. However, the Company's estimate of Glacier Hill's cost per unit of output at the time the Application was filed was substantially higher than the prices offered by the rejected PPA proposals.

[18] [redacted]

Exhibit 201 (JFW-2) compares the cost of Glacier Hills, as estimated for the Application, against the higher-priced of the two rejected PPA proposals. As indicated, I show two projections of annual costs (including both capital and operating costs) per MWh for Glacier Hills. One projection assumes ratebase recovery of Glacier Hills capital costs, and simply replicates annual cost output from the Company's original EGEAS modeling of Glacier Hills.[19] The other projection restates annual ratemaking costs in terms comparable to those proposed in the rejected PPA. In other words, I have estimated what the starting price would be if Glacier Hills capital and operating costs were recovered in a PPA-like fashion, using the same annual escalation rate as proposed in the rejected PPA.

As indicated in Exhibit 201 (JFW-2), I estimate a starting price for PPA-like recovery of Glacier Hills of about [redacted]/MWh. This starting price exceeds that of the more-expensive of the two rejected PPA proposals by about [redacted]%.[20]

Q: Would the rejected PPA proposals still be competitive against the updated cost estimate for Glacier Hills?

A: At this point, the price offers for the rejected PPA proposals are just too stale to compare against the current estimate for Glacier Hills. According to the supplemental direct testimony of Richard E. O'Conor, softening in the turbine market since late 2008 provided an opportunity for the Company to negotiate lower turbine prices and thus reduce the overall cost for Glacier Hills. Given the

[19] This data is compiled from the EGEAS output file Final-Report.Out for Case 2-1, provided in response to PSCW Request for Additional Information 03.03.

[20] The rejected PPA proposed a commercial-operation date two years earlier than Glacier Hills. For purposes of this comparison, I escalated the PPA starting price at the escalation rate proposed in the PPA to derive an equivalent starting price for a PPA that starts at the same time as Glacier Hills.

opportunity to re-price, the sponsor of the rejected PPA proposals may have also been able to capitalize on this market softening to reduce project costs and hence offer lower prices.

Q: Were any shortlisted projects rejected as a result of the more-detailed evaluation that followed initial screening?

A: [redacted] The one biomass project was rejected because it was "not cost competitive and also raised concerns about the ability to guarantee the feedstock."[21]

[redacted]

Q: Did the Company undertake any further economic evaluation, or due diligence assessment of the projects remaining on the short list?

A: No. According to a summary report on the status of the RFP evaluation process provided to WEPCO management:

[21] TSD, p. 15.

[redacted][22]

This summary report also explained that detailed evaluations were not undertaken because [redacted]

[redacted][23]

Q: Did the Company undertake a systematic ranking of the projects remaining on the short list?

A: There is no indication in the RFP documentation provided by WEPCO that the Company ranked shortlist projects on the basis of project economics or other non-price attributes in any comprehensive or systematic fashion. The only evidence of any form of ranking process is in the summary report to management mentioned above, where one project is singled out as [redacted]

[redacted][24]

The summary report did not elaborate on the Company's rationale for weighing [redacted] in the ranking process, or explain how these trade-offs led to designation of the [redacted]

[22] E-mail from Chris Akkala to Rick Kuester, September 12, 2008. Provided in response to 1-CUB/RFP-5.

[23] *Id.*

[24] *Id.*

Q: Did the summary report recommend moving forward with this [redacted] project?

A: On the contrary, the summary report recommended that:

> [redacted][25]

Q: What was the basis for the Company's decision to move forward with Glacier Hills, rather than with any of the shortlisted RFP projects?

A: According to the Technical Support Document:

> Of the ten projects, Randolph (now Glacier Hills) is considered the most economically viable project.[26]

However, WEPCO has not provided any documentation of any type of economic comparison of Glacier Hills against the RFP alternatives in support of this assertion. Instead, in response to 2-CUB/RFP-13, the Company indicated that it did not consider project economics in its designation of Glacier Hills as the "most economically viable" project:

> The phrase "most economically viable" was written in the context of the latter part of the sentence, "that is in the best position for immediate development." Given the uncertainties of the other project, Glacier Hills was a predictable and inexpensive option. Securing the project rights for $10, which included land control, transmission rights, and solid wind production analysis, Glacier Hills was the "most economically viable."

In fact, summary data on the RFP projects compiled by the Company shows that developers were offering to sell turn-key wind facilities at prices, on a per-kW basis, that were well below the Company's original estimate of the capital cost for Glacier Hills. According to a summary table compiled during the

[25] *Id.*

[26] TSD, p. 16.

RFP evaluation process, the short list included [redacted][27] In contrast, the Company's original EGEAS modeling of Glacier Hills in support of the Application simulated a capital cost (including AFUDC) of [redacted] million for a 162 MW facility, or about [redacted]/kW.[28] In other words, developers were offering to sell fully built facilities at prices that were anywhere from slightly to [redacted]% cheaper than the Company's estimate to build Glacier Hills.

Even though the evaluation process indicated a potential cost advantage for several project proposals, the Company apparently and inexplicably did not further investigate the economic benefits of these project proposals in relation to Glacier Hills. Instead, [redacted].[29]

[27] Provided in response to 1-CUB/RFP-5. This table was included with the summary report to management discussed above.

[28] See p. 433 of the EGEAS output file Final-Report.Out for Case 2-1, provided in response to PSCW Request for Additional Information 03.03.

[29] E-mail from Rick Kuester to Gale Klappa and Roman Draba, August 21, 2008, provided in response to 1-CUB/RFP-5.

V. EGEAS Modeling of Glacier Hills

Q: Does the Company's EGEAS modeling indicate whether Glacier Hills is less costly than the alternative RFP proposals on the short list?

A: No. The Company structured its EGEAS modeling to estimate the impact on total system costs from the addition of Glacier Hills to the base case resource portfolio. For example, in its original EGEAS modeling in support of the Application, WEPCO found that adding Glacier Hills in 2012 to the base case without carbon constraints (Case 1-1-F) increased total costs for the base case by $117 million (2008 net present value).[30]

However, the Company apparently did not run EGEAS to determine whether Glacier Hills has a smaller impact on total system costs than any of the shortlist alternatives. In other words, WEPCO did not conduct EGEAS simulations to determine whether Glacier Hills is the least-cost option available to the Company to meet its RPS requirement.

Q: Does the fact that certain EGEAS simulations selected Glacier Hills for operation in 2012 over generic renewable alternatives modeled in EGEAS indicate that Glacier Hills may be the least-cost option for meeting the RPS requirement?

A: No. Although the EGEAS modeling included generic renewable alternatives to Glacier Hills, none of these generic alternatives were allowed to be installed by the model in 2012. In contrast, 2012 was the only year that Glacier Hills was allowed to be installed by EGEAS. Thus, when the EGEAS model determined a

[30] In the updated EGEAS simulations for the supplemental direct testimony, the impact of adding Glacier Hills declined to $36 million (2008 net present value). See *Supplemental Direct Testimony of Jeffrey Elver*, PSCW Docket No. 6630-CE-302, May 29, 2009, pp. 213-214.

need for new renewable capacity in 2012 in certain simulations, Glacier Hills was the only option available for installation in that year.

Q: How could WEPCO have run EGEAS to determine the least-cost option for meeting its RPS requirement?

A: One relatively straightforward approach would have been to run a series of sensitivities on the base case that adds to the base case resource portfolio one of the shortlist projects in each sensitivity simulation.[31] As with Case 1-1-F, which determines the incremental cost impact from Glacier Hills, each of these sensitivities would have yielded the increment to system cost from the addition of one of the shortlist projects.[32] The shortlist projects could then have been ranked along with Glacier Hills on the basis of incremental impact on total system cost.

Q: Is it valid to compare and rank projects that have different capacities and operating characteristics on the basis of incremental impact on total system cost?

A: Yes. The EGEAS model accounts and essentially normalizes for all such differences in the simulation of generation dispatch to meet system energy requirements and in the simulation of capacity expansion to meet minimum planning-reserve requirements. An EGEAS simulation of total system cost

[31] This analysis would be relatively straightforward with respect to the [redacted]

[32] The incremental impact would be derived as the difference between total system cost for the EGEAS simulation with the added project and total system cost for the EGEAS simulation for the base case.

would account not just for the direct increase in capital cost from adding an RFP project to the base case portfolio, but also the indirect cost effects from changes in system dispatch and capacity additions compared to the base case. Thus, the change in total system cost relative to that for the base case reflects the combined effect on system costs from the addition of a project of particular cost, size, and operating characteristics.

Q: Should WEPCO undertake these sensitivity simulations at this point in time?

A: No. Unfortunately, the sale prices offered for the shortlist projects are more than a year old, and therefore outdated and invalid. After this much time, it is not even clear that any of the RFP proposals are still on the table at any price.

VI. The Invenergy Proposal

Q: Does the Company have any current offers for alternatives to Glacier Hills?

A: Yes. Invenergy Wind LLC has filed in this proceeding a proposed PPA, along with supporting testimony, for the sale of the output from the 150 MW Ledge Wind facility located in Brown County. Invenergy is in the process of developing the Ledge Wind site, and anticipates starting commercial operation by April 1, 2011.[33]

The proposed PPA is for a [redacted]-year term. The PPA specifies a starting price of [redacted]/MWh and a fixed annual escalation rate of [redacted]%.[34]

[33] *Direct Testimony of Michael Arndt on Behalf of Invenergy Wind LLC*, PSCW Docket No. 6630-CE-302, April 16, 2009, p. 303.

[34] *Direct Testimony of Mark Leaman on Behalf of Invenergy Wind LLC*, PSCW Docket No. 6630-CE-302, April 16, 2009, p. 310c.

Q: How do prices under the proposed Invenergy PPA compare to expected costs for the Glacier Hills project?

A: Under the Company's revised forecast of Glacier Hills' cost and performance, Glacier Hills appears to be the less-expensive option.[35] Using the same approach described above for the evaluation of the rejected PPA responses to the RFP, I have calculated what the starting price would be if Glacier Hills ratemaking costs (as calculated in EGEAS) were recovered in a PPA-like fashion, using the same annual escalation rate as specified in the Invenergy PPA. Using this approach, I estimate a starting price for PPA-like recovery of Glacier Hills of [redacted]/MWh, or about [redacted] than the proposed starting price for the Invenergy PPA.

Q: Does the Invenergy PPA offer offsetting benefits?

A: As is typical with wind power-purchase agreements, the Invenergy PPA offers pricing terms that mitigate [redacted]

Q: Are there any price risks that Invenergy will not assume under the PPA?

A: There appear to be two price risks that would be borne by ratepayers under the terms of the proposed PPA. First, per Section 8.3 of the PPA, WEPCO would bear [redacted] Second, per Section 5.1, WEPCO would bear all [redacted][36]

[35] This is the reverse of the ranking under the Company's original forecast, where the Invenergy proposal appeared to be significantly less expensive than Glacier Hills.

[36] The Company also bears these [redacted] risks with Glacier Hills.

Q: How should WEPCO proceed with regard to Invenergy's proposal?

A: As a potentially cost-effective addition to the Company's RPS portfolio, the Invenergy proposal merits further consideration by the Company, with an eye toward negotiation with Invenergy over contract price and terms. As a basis for any such negotiations, the Company should undertake a comprehensive economic evaluation and due-diligence assessment of the proposed facility and PPA. The economic evaluation should include EGEAS simulation of the impact on system cost from the addition of the Invenergy PPA to a base-case resource portfolio, as described above, and comparison against the incremental system cost associated with the addition of Glacier Hills.

Q: Should the Company make any corrections to its EGEAS modeling before evaluating the Invenergy PPA?

A: Yes. As discussed above in Section III, the Company expects there to be surplus capacity on the system in excess of the 14.5% minimum planning requirement through at least 2019, even before any further capacity is added to meet RPS requirements. Moreover, in response to 2-CUB/Inter-4, the Company indicates that it intends to sell any excess capacity above the 14.5% minimum, and that it has already done so for 2009. However, the Company's EGEAS modeling currently does not account for any corrective actions to mitigate the impacts of system surpluses. As a result, the Company's EGEAS simulations likely overstate both the total system cost of the base portfolio and the incremental cost from any additions of renewable capacity to meet RPS requirement.

The Company should therefore correct its treatment of excess capacity in the EGEAS modeling, to account for mitigation of system surpluses either through off-system sales or mothballing or retirement of excess capacity.

Q: Does this complete your direct testimony?

A: Yes.