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UTILITIES CO.
A Division of MDU Resources Group, Inc.

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March 11, 2005

Ms. Pamela Bonrud
Executive Director
South Dakota Public Utilities
Commission
State Capitol Building
500 East Capitol
Pierre, SD 57501

Re: Docket No. EL04-016

Dear Ms. Bonrud:

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc. herewith submits the original and eleven (11) copies of the rebuttal testimony of Mr. Edward D. Kee.

Please acknowledge receipt by stamping or initiating the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope.

Sincerely,

Donald R. Ball

Donald R. Ball
Assistant Vice President –
Regulatory Affairs

Attachment
cc: Service List

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Docket No. EL04-016
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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE FILING BY SUPERIOR RENEWABLE ENERGY LLC ET AL. AGAINST MONTANA-DAKOTA UTILITIES CO. REGARDING THE JAVA WIND PROJECT	))))))	EL04-016

REBUTTAL TESTIMONY OF EDWARD D. KEE

11 MARCH 2005

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name, title, and business address.

A. My name is Edward D. Kee. I am a member of the management group of PA Consulting Group, Inc. ("PA"), a global management and technology consulting firm. My business address is PA Consulting Group, 1750 Pennsylvania Avenue, NW, Washington, DC 20006.

Q. Are you the same Edward Kee who filed direct testimony in this case?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this rebuttal testimony is to address and respond to issues raised in the testimony and other filings since my direct testimony was filed on 31 January 2005.

Q. What testimony is covered by this rebuttal testimony?

A. Mr. Woolf submitted direct testimony on behalf of the South Dakota Public Utilities Commission ("SDPUC") and Mr. Bennett submitted testimony on behalf of NorthWestern Energy.

Q. What other issues are addressed in this rebuttal testimony?

A. I provide comments in this rebuttal testimony that are based upon recent developments related to the interconnection costs of the proposed Java Wind Project and the appropriate treatment of those costs. I also discuss recent developments in the MISO market.

Q. What are your conclusions?

A. I discuss and support these conclusions in my testimony:

- Mr. Woolf's recommendations for avoided capacity and energy payments are inconsistent with PURPA and with Order F-3365 and will harm Montana-Dakota customers.
- Mr. Woolf's recommendation regarding inclusion of environmental externalities in avoided costs is an inappropriate attempt to expand PURPA.
- Mr. Woolf's recommendation that Montana-Dakota should only be allowed to collect wind integration costs if they conduct a new analysis is without merit.
- Mr. Woolf's recommendation to extend the term of the PPA to be longer than ten years is inconsistent with the state of the industry, the likely demise of PURPA, and other factors.

II. MR. WOOLF'S TESTIMONY

Q. What is your overall assessment of Mr. Woolf's testimony?

A. Mr. Woolf's testimony is weighted toward the promotion of wind energy rather than an application of the Public Utilities Regulatory Policies Act of 1978 ("PURPA") and SDPUC Decision and Order F-3365 dated 14 December 1982 ("Order F-3365").

Q. Are Mr. Woolf's recommendations consistent with the intent and language of PURPA?

A. No. PURPA is intended to provide an opportunity for qualifying generation facility owners to sell electricity to a single regulated electric utility at prices not greater than the purchasing utility's avoided costs. PURPA does not permit, let alone provide for the establishment of prices above avoided costs that are aimed at assuring the economic viability of a generation technology or of a specific facility. If the generation facility owner wants prices based on its costs or economic principles other than the utility's avoided costs under PURPA, these non-PURPA prices must be obtained through a traditional Power Purchase Agreement ("PPA") negotiation process or through participation in the power markets.

Q. What specific items in Mr. Woolf's testimony do you address?

A. In the following testimony I discuss each recommendation made by Mr. Woolf, in the order that he presents these recommendations. Finally, I discuss Mr. Woolf's failure to provide quantification of his many recommendations. In some cases, extensive analyses will be required based upon speculative assumptions in order to develop quantitative estimates of the added costs to customers associated with his recommendations.

A. <u>AMENDING ORDER F-3365</u>

Q. What are Mr. Woolf's recommendations to amend Order F-3365?

A. Mr. Woolf recommends that the Commission amend Order F-3365 to adopt his preferred approach to calculating avoided cost. (Page 10, lines 15 to 20). Mr. Woolf's approach includes (a) the use of a peaking unit proxy for avoided capacity costs instead of the base load unit required in Order F-3365; and (b) increasing avoided energy costs by an amount for "capitalized energy costs of the new baseload generation unit." In addition. Mr. Woolf makes a number of other recommendations that are inconsistent with Order F-3365 (eg, that Montana-Dakota make avoided capacity payments in off-peak periods), suggesting that he is calling for even wider amendments.

Q. What would be the impact of adopting Mr. Woolf's recommendation to amend Order F-3365?

A. The proposed amendment to Order F-3365 will significantly increase the amount paid by Montana-Dakota and its customers for the same capacity and energy. His approach takes fixed costs (ie, those related to the cost to build a baseload power plant) and puts these into the variable payment (ie, energy payments on a $ per MWh basis) in a manner that will increase the total payments made to the proposed Java Wind Project and remove, in Period 3, any differentiation between on-peak and off-peak pricing.

Q. Why would this recommendation increase the amount paid by Montana-Dakota?

A. All wind generators provide relatively little dependable capacity compared to the maximum wind generation turbine output. The proposed Java Wind Project, with an estimated MAPP accredited on-peak capacity of 7 MW, has the capability to produce up to 30.6 MW. Mr. Woolf's proposed revision to Order F-3365 will result in minor reductions in avoidable capacity payments because the avoided unit is changed from a base load plant to a peaking plant. Any reductions in avoided capacity payments will be minor, because the proposed Java Wind Project allows Montana-Dakota to avoid little capacity. This same revision, however, would result in significantly increased avoided energy payments because avoided energy prices include Mr. Woolf's "capitalized energy costs of the new baseload generation unit". The increase in avoided energy payments will be significant, because of the larger amount of energy produced by the proposed Java Wind Project, much of it in the off-peak periods. I will discuss later, in the section on avoided energy costs in period 3, other negative impacts of this recommended approach to avoided energy payments.

Q. Do you agree with Mr. Woolf's recommendation that the SDPUC revise Order F-3365 in the current proceeding?

A. I do not agree that this Proceeding is the appropriate place to consider such revisions. If the Commission wishes to amend its implementation of PURPA, it should be done in a generic proceeding open to all potentially affected parties and the scope should be widened to include all aspects of implementing PURPA in the current market environment. My recommendation is that this Proceeding should apply Order F-3365 as currently written and consider any recommendations for amendments to Order F-3365 in a separate proceeding.

Q. Does Mr. Woolf discuss other departures from the approach in Order F-3365?

A. Yes. While Mr. Woolf does not explicitly recommend that Order F-3365 be amended in each instance, he recommends a number of approaches that are inconsistent with Order F-3365. These approaches are either in conflict with Order F-3365 or expand the scope of Order F-3365 and include:

- Recommendations that are inconsistent with the fundamental tenet of Order F-3365 that avoided capacity costs are based on capacity <u>actually</u> avoided
- Recommendations that the SDPUC go beyond the limited role in PPA negotiation described in Order F-3365 to take a much more intrusive approach (eg, inclusion of the cost of future climate change regulations and adding new rules on the PPA term)

B. PLANNING-BASED AVOIDED COSTS

Q. What are Mr. Woolf's recommendations with respect to planning-based avoided costs?

A. Mr. Woolf recommends that the SDPUC require that Montana-Dakota use planning-based estimates of avoided costs (Page 13, lines 22 to 25). The unstated result of this recommendation is that the SDPUC adopt a position that rules out the use of market prices as a measure of avoided energy prices as other states have done.

Q. Does Order F-3365 address this issue?

A. No. Order F-3365 provides only general guidance on how avoided energy costs are to be calculated. Order F-3365 does not preclude the use of market prices as a measure of avoided energy prices.

Q. What is the expected impact of Mr. Woolf's recommendation not to use actual market determined avoided costs?

A. The primary effect of this recommendation will be to require that any PPA arising from this Proceeding (and possibly any future PPAs negotiated in the state) contain stipulated prices that are based on avoided cost estimates rather than using actual market prices as a measure of avoided energy costs. Such stipulated prices, in connection with other recommendations from Mr. Woolf (eg, increasing avoided energy costs to include the energy value of a baseload unit and a longer PPA term), present significantly higher risks to Montana-Dakota and its customers.

Q. Do you agree with Mr. Woolf's assertion that there is not a valid MISO market?

A. Mr. Woolf (Woolf testimony, page 13, lines 1-6) wrongly assumes that the MISO trading hub that would apply to Montana-Dakota will not be operational when MISO Day 2 market operation commences. Even if MISO's announced plans for a Minnesota hub were delayed, my proposal is to use the stipulated avoided costs until such time as the market is in place.

Q. Does the relative newness of the MISO spot market preclude the use of MISO spot prices as the measure of avoided energy costs?

A. No. Given Mr. Woolf's concern that the MISO market is new, we would propose that Mr. Woolf provide an objective and measurable set of factors that would give an indication that the MISO spot market is sufficiently robust to use as a measure of avoided energy prices. Assuming that these factors are reasonable, the parties could agree to incorporate them into the PPA as a trigger for the shift from stipulated prices to market prices.

Q. Is the Commission required to use stipulated prices (ie, fixed estimates of forecasted avoided energy costs) rather than actual avoided costs (ie, spot market prices)?

A. No. Mr. Woolf misstates the constraints on the Commission's authority (Page 22, lines 12 to 14). I find nothing that constrains the Commission from using market prices as a measure of avoided energy costs and nothing that requires the Commission to use only planning estimates for avoided energy costs.

Q. Can you summarize the reasons for your disagreement with Mr. Woolf's recommendation that Montana-Dakota be required to only use planning-based (ie, stipulated) avoided cost estimates?

A. As I explained in my direct testimony, there are important reasons why such stipulated prices present unreasonable levels of risk and reasons that spot market prices that reflect current market conditions are a better measure of avoided energy costs than such stipulated prices. These reasons were the basis for the adoption of spot market prices as a more appropriate measure of avoided energy costs in other states.

C. CAPACITY VALUE FOR THE PROPOSED JAVA WIND PROJECT

Q. Please summarize your understanding of Mr. Woolf's recommendations with respect to the capacity value for the proposed Java Wind Project?

A. Mr. Woolf recommends that the SDPUC reject the approach in my direct testimony and adopt the Superior approach that uses the simple average of the amounts of monthly capacity in the summer months predicted for the proposed Java Wind Project.

Q. What is the expected impact of this recommendation?

A. The effect of this recommendation is to increase the avoided capacity payments, no matter how the avoided capacity cost is determined, by over 50%.

Q. Does Order F-3365 address this issue?

A. Yes. Order F-3365 provides that only capacity actually avoided may receive avoided capacity payments. Mr. Woolf's recommendation is contrary to this provision.

Q. Describe the rationale for Mr. Woolf's recommendation?

A. Mr. Woolf's rationale is that the approach outlined in my direct testimony (ie, the minimum predicted MAPP accredited capacity during peak period months) "is likely to undervalue the capacity provided by the Java Wind Project." Mr. Woolf goes on to explain that he is seeking to "strike a better balance between (a) MDU paying for capacity actually avoided, and (b) Superior being adequately compensated for the capacity value of the Java Wind Project." Thus, Mr. Woolf admits that he is not using the measure in Order F-3365 (ie, the capacity that is actually avoided by the purchasing utility), but is simply proposing an arbitrary approach that results in more payments to the Java Wind Project. The requirements of PURPA and Order F-3365 do not include setting prices that exceed actual avoided costs in the interest of "striking a balance" that is aimed at increasing the amount paid to the proposed Java Wind Project.

Q. Would Montana-Dakota's customers pay twice for capacity under this recommendation?

A. Yes. Montana-Dakota must have sufficient capacity to meet its peak demand regardless of which month it occurs. It cannot meet peak demand requirements with average monthly capacity. Montana-Dakota must purchase 3.6 MW (ie, 10.6 minus 7) of capacity from another source to cover its capacity needs for the seasonal peak even though it is "purchasing" this capacity from the proposed Java Wind Project. Thus, Mr. Woolf's recommendation would require Montana-Dakota to purchase this 3.6 MW of capacity twice.

Q. Does Mr. Woolf reflect the MAPP accredited capacity approach in his suggestion that a "rolling average of at least three years" be used to determine capacity value?

A. No. The MAPP process involves a long-term average of historical actual performance and there is no need for any rolling average approach.

Q. Are there sufficient data to make a long-term forecast of avoided capacity payments for the proposed Java Wind Project?

A. No. At this time, Superior's predictions of output are based upon only 18 months of wind data, hypothetical wind turbine performance, and an unknown set of assumptions about reliability and outages. I discuss later Mr. Bennett's assessment that Superior's predicted capacity factor for the proposed Java Wind Project is too high compared to operating wind projects in the region.

Q. Do you agree with Mr. Woolf's recommendation that the SDPUC adopt Superior's approach to determining a capacity value of the proposed Java Wind Project?

A. No. As I explained in my direct and rebuttal testimony, the Superior approach departs from the requirement in PURPA and Order F-3365 that avoided capacity payments are made for capacity actually avoided by Montana-Dakota. The Superior approach would result in higher-than-appropriate avoided capacity payments that are unrelated to capacity actually avoided and will thus put an undue financial burden on Montana-Dakota and its customers.

D. OFF-PEAK AVOIDED CAPACITY PAYMENTS

Q. What are Mr. Woolf's recommendations with respect to off-peak avoided capacity costs?

A. Mr. Woolf recommends that Montana-Dakota include avoided capacity payments for capacity in the off-peak period (Page 18, lines 11 to 15).

Q. Has Mr. Woolf provided an estimate of the effect of this recommendation?

A. No. Mr. Woolf has not provided any estimates of the avoided capacity payments in off-peak months, although he surmises that the "value [of capacity from the proposed Java Wind Project] during off-peak periods would be relatively low, but is likely to be greater than zero."

Q. What is the expected effect of this recommendation?

A. To the extent that there is any amount paid to the proposed Java Wind Project for capacity in the off-peak months, this recommendation will have the effect of increasing the payments by Montana-Dakota and its customers.

Q. Does Order F-3365 address this issue?

A. Yes. Order F-3365 provides that avoided capacity payments must be based only on capacity <u>actually</u> avoided. Mr. Woolf's recommendation is contrary to the guidance in Order F-3365.

Q. Does the off-peak capacity of the proposed Java Wind Project allow Montana-Dakota to actually avoid any capacity or create marginal value?

A. No. Montana-Dakota will not avoid any capacity and there is no evidence that more off-peak capacity creates marginal value for the utility. Off-peak capacity, assuming it has any market value, only creates incremental value to Montana-Dakota if it can sell the incremental capacity provided by Superior in addition to its own marginal capacity.

Q. Has Mr. Woolf provided any mechanism to determine off-peak avoided capacity costs?

A. No. Mr. Woolf seems to suggest that Montana-Dakota participate in a "real-time, competitive, wholesale capacity market" that doesn't currently exist, and then simply pass along any revenues from the sale of capacity from the proposed Java Wind Project to Superior.

Q. Is this proposal consistent with Mr. Woolf's primary recommendation that avoided costs should be made on a planning basis?

A. No. Mr. Woolf strongly recommends against the use of market prices in avoided energy prices, while preferring the market price approach for determining off-peak capacity payments. My concern is that Mr. Woolf's real recommendation is to predict some non-zero "market" value for avoided capacity from the proposed Java Wind Project in off-peak months, then include these predicted market values in a long-term PPA, adding yet another stipulated price to the PPA.

Q. Do you agree with Mr. Woolf's recommendation that Montana-Dakota make off-peak avoided capacity payments?

A. No. This recommendation will simply increase the cost to Montana-Dakota by forcing the utility to pay for capacity that is not actually avoided. If Superior wishes to sell off-peak capacity, then it should pursue those sales through market negotiations rather than under PURPA.

E. FUTURE CLIMATE CHANGE REGULATIONS

Q. What are Mr. Woolf's recommendations with respect to future climate change regulations?

A. Mr. Woolf recommends that Montana-Dakota's avoided costs include the costs of future climate change regulations or future environmental regulations (Page 27, line 16 to page 28, line 21).

Q. Has Mr. Woolf provided an estimate of the costs of future climate change regulations that should be added to Montana-Dakota's avoided costs?

A. No. Mr. Woolf has not provided any estimate of these costs. Mr. Woolf acknowledged that there is insufficient information to allow the SDPUC to adopt any such costs in this Proceeding. Instead, Mr. Woolf recommends that the SDPUC impose a requirement that any PPA arising from this Proceeding have the pricing updated after ten years, with this update specifically including future estimates of the costs of climate change regulations (Page 28, lines 13 to 21).

Q. What is the expected effect of this recommendation?

A. Mr. Woolf's recommendation will have no apparent effect in the first ten years of a PPA. However, his recommendation means that Montana-Dakota would be entering into a PPA in 2005 with a term of up to 25 years that includes an obligation to pay an unknown amount (ie, the cost of future climate change regulations) in the period from 2015 to the end of the PPA. This un-quantified obligation could add significant risk to Montana-Dakota and its customers. The effect of this recommendation is to increase the risk of the PPA by adding a speculative future obligation.

Q. What is the significance of Mr. Woolf's testimony related to CO_2 emissions and allowances?

A. On pages 24 – 27 of Mr. Woolf's testimony he presents his views of "electric utility planning and forecasting" with a focus on CO_2 emissions and allowances. This testimony is not about Mr. Woolf's recommendation to include future climate change regulation costs in avoided costs, but appears to be about the inclusion of climate change regulations focused on CO_2 emissions in utility planning processes. This topic is only remotely relevant to this Proceeding, has little bearing on the issues set in this Proceeding (ie, the implementation of PURPA in South Dakota), and is better addressed in the utility planning processes in South Dakota.

Q. Do you agree with Mr. Woolf's recommendation that future climate change regulations be reflected in Montana-Dakota's avoided costs?

A. No. Mr. Woolf's proposal to include costs of future climate change regulations will present risks to Montana-Dakota and its customers and can only have the effect of increasing the payments to the proposed Java Wind Project. The costs of future climate change regulation are too speculative to include in a PPA and do not reflect avoided costs under PURPA. The avoided costs already include building a coal plant with the best available technology as required by environmental regulations. Mr. Woolf asks that the SDPUC impose an obligation on Montana-Dakota to pay such costs after ten years, without providing any estimate of such costs or providing any framework for the determination of such costs.

F. AVOIDED CAPACITY COSTS

Q. Please describe Mr. Woolf's recommendation for avoided capacity costs?

A. Mr. Woolf recommends that avoided capacity costs be based on the real levelized cost of a combustion turbine unit (Page 29, lines 3 to 6).

Q. What is the expected effect of this recommendation?

A. While Mr. Woolf has not provided an estimate of these recommendations, this recommendation will have the effect of reducing the avoidable capacity cost as calculated in Exhibit EDK-4. This is the result of substituting a combustion turbine unit with lower capital costs for the base load coal unit as is required by Order F-3365. The effect of this recommendation is to reduce Montana-Dakota's avoided capacity payments to the proposed Java Wind Project by an amount of $411,810 per year. As noted below, this amount is a small fraction of the increase in avoided energy payments in Period 3 resulting from Mr. Woolf's approach.

Q. Does Order F-3365 address this issue?

A. Yes. Order F-3365 provides an explicit approach to determining avoided capacity costs. Mr. Woolf's recommendation adopts a different approach from Order F-3365.

Q. Is this recommendation linked to any other recommendations?

A. Yes. Mr. Woolf explicitly links (Page 30, lines 18 to 30) his recommendation on the avoided unit with his recommendation that the avoided energy cost be increased by an amount to reflect the energy value of baseload capacity.

Q. Do you agree with Mr. Woolf's recommendation that a combustion turbine unit become the avoided unit for all periods?

A. No. As noted earlier, changes to Order F-3365 should only be done in a generic proceeding that considers PURPA implementation in the context of the current industry structure and electricity markets.

G. AVOIDED ENERGY COSTS

1. Short-run avoided energy costs

Q. Does Mr. Woolf recommend any changes in the approach to determining short-run avoided energy cost?

A. Yes. Conceptually, Mr. Woolf recommends (Page 30, lines 9 to 13) that estimates of the costs associated with future climate change regulations be included in short-run avoided energy cost calculations "at this time." However, Mr. Woolf does not provide any estimates of these future climate change regulations or provide any guidance on how such future costs would be included in a short-run production simulation model analysis.

Q. What is the effect of this recommendation?

A. If we assume that there is no increase due to unspecified costs associated with future climate change regulations (as Mr. Woolf does in other parts of his testimony), there is no impact on short-run avoided energy costs.

2. Long-run avoided energy costs

Q. What are Mr. Woolf's recommendations with respect to long-run avoided energy costs?

A. Mr. Woolf recommends a significantly different approach to avoided energy costs. My understanding of his recommendation is that avoided energy prices in Period 3 are composed of (a) the marginal operating costs of the actual avoided unit (ie, a baseload coal station), plus (b) an amount for "capitalized energy."

Q. What is the effect of this recommendation?

A. While Mr. Woolf has not provided an estimate of these recommendations, this recommendation will significantly increase the payments that Montana-Dakota makes for avoided energy in Period 3. I estimate that the effect of this recommendation is that Montana-Dakota will make avoided energy payments to the proposed Java Wind Project of \$5.174 million per year in 2011, an amount that is more than twice the actual avoided energy cost of \$2.447 that is predicted for 2011. The net increase in avoided energy payments of \$2.727 million per year is far greater than the \$.411 million in reduced avoided capacity payments discussed above.

Q. Why is this approach particularly inappropriate in the Montana-Dakota region?

A. The MAPP Northwest region currently has and will likely continue to have base-load coal units on the margin for much of the year. My calculation of avoided energy costs, based upon the Commission's approved methodology, reflects the status of coal on the margin. Mr. Woolf's recommendation would result in avoided energy prices that are greater than actual system incremental costs and above regional incremental costs for much of the year.

Q. Does Order F-3365 address this issue?

A. Yes. Order F-3365 provides, on page 12, that:

"The Commission finds that both short-term and long-term contracts should include an energy credit based on average of the expected hourly incremental avoided costs calculated over the hours in the appropriate on-peak and off-peak hours as defined by the utility."

Q. Why is this recommendation not consistent with Order F-3365?

A. Mr. Woolf's recommended approach to avoided energy prices in Period 3 will not be based on incremental avoided costs at all and will not reflect any difference between on-peak and off-peak hours. Mr. Woolf has used an arbitrary approach to estimating avoided energy costs that is totally unrelated to actual avoided energy costs at Montana-Dakota. The real purpose of this recommendation appears to be an effort to increase payments to the proposed Java Wind Project and thereby improve the return to its investors.

Q. Why is it inconsistent with PURPA to include the capitalized energy cost in the avoided cost calculation for the proposed Java Wind Project?

A. Mr. Woolf's proposal results in Montana-Dakota and its customers paying more than avoided costs due to the nature of the Qualifying Facility ("QF") in this Proceeding. If the QF facility were a base load coal plant, then Mr. Woolf's calculation of the avoided cost between energy and capacity might not have a significant financial implication to the purchasing utility. This is because the increase in avoided energy payments would be offset by reductions in avoided capacity payments. However, because of the inherent nature of a wind QF, Montana-Dakota avoids, at most, only the estimated accredited capacity of 7 MW of the approximate 30.6 MW of nameplate capacity, so that the significant increase in avoided energy payments is not offset by reductions in avoided capacity payments. Since Montana-Dakota will still have to purchase base load capacity for its capacity needs above the accredited amount, Montana-Dakota will pay twice for most of the difference between 30.6 and 7 MW. The first purchase is when Montana-Dakota builds a coal station and the second time is when it makes avoided energy payments that include Mr. Woolf's capitalized energy cost.

Q. Does this recommendation present other problems?

A. Yes. In addition to removing any differentiation between on-peak and off-peak period prices, this recommendation will result in avoided energy prices that are higher than Montana-Dakota's actual incremental energy costs for most of the year and that are higher than MISO spot market prices for most of the year, because coal units are on the margin for much of the year in the region.

Q. Should the SDPUC adopt Mr. Woolf's recommendations for an approach to long-run avoided energy costs?

A. No. Mr. Woolf's recommendation provides avoided energy payments in Period 3 that are arbitrary, inconsistent with PURPA and Order F-3365, and that will present Montana-Dakota with avoided energy payments that are certain to be greater than actual avoided energy costs.

H. WIND INTEGRATION COSTS

Q. What are Mr. Woolf's recommendations with respect to wind integration costs?

A. Mr. Woolf recommends that Montana-Dakota "should be required to provide sufficient demonstration that such [wind integration] costs will actually be incurred, and estimates of such costs must be based on an assessment of the specific conditions relevant to" Montana-Dakota and the proposed Java Wind Project (Page 33).

Q. Has Mr. Woolf provided an estimate of the effect of this recommendation?

A. No. Mr. Woolf assumes, with little justification, that the level of wind integration costs are "much smaller" than the amounts in my direct testimony (Page 32), but does not provide his estimate of wind integration costs for Montana-Dakota.

Q. What is the expected effect of this recommendation?

A. To the extent that the wind integration adjustments included in any PPA with the proposed Java Wind Project are smaller than originally proposed in my direct testimony, this recommendation will increase the total payments to Superior by Montana-Dakota.

Q. Does Mr. Woolf acknowledge that wind integration costs exist?

A. Yes. Exhibit TW-3 clearly identifies costs due to wind-integration. The studies discussed in Exhibit TW-3 cover a range of conditions, hydro capacity, wind penetration levels, and degree of sophistication in analysis. However, these studies all show that there are real costs of wind integration.

Q. Do you agree with Mr. Woolf's recommendation?

A. I agree with his statement that wind integration costs are a function of the amount of wind on the system and that the study I cited in my direct testimony may be on the high side of the reasonable range. I disagree with his recommendation that Montana-Dakota must complete a lengthy and expensive analysis prior to including any wind integration costs in a PPA or in the calculation of avoided costs. Mr. Woolf's recommendation would mean that any PPA arising from this Proceeding might be delayed for a year or more while such an analysis was undertaken by Montana-Dakota, because Montana-Dakota would be unwilling to sign a PPA with no wind integration adjustments.

Q. What about Mr. Woolf's requirement that Montana-Dakota demonstrate that wind integration costs are "significant enough to require recovery" from the proposed Java Wind Project?

A. Mr. Woolf does not provide the logic or the test he might apply to determine what his term "significant enough" really means. The studies in Exhibit TW-3, along with the study cited in my direct testimony, establish that wind integration costs exist and will be incurred by Montana-Dakota, satisfying the first part of his recommendation (ie, that Montana-Dakota must prove that any wind integration "costs will actually be incurred").

Q. Does Mr. Woolf agree that wind integration costs are real?

A. Yes. Exhibit TW-3 clearly shows that wind integration costs are real. Also, even though the analyses were not performed by Montana-Dakota, five of the data points in Exhibit TW-3 are studies in the MAPP region (ie, We Energy, Great River, and UWIG).

Q. Based upon further research and the studies cited by Mr. Woolf, have you revised your estimate of the wind integration costs?

A. My analysis and review of reputable studies show that the wind integration costs that will be incurred by Montana-Dakota are in the $2.00 - $4.60 per MWh range.

Q. What do the studies presented by Mr. Woolf conclude?

A. Mr. Woolf's testimony reflects and relies upon the literature in this field and notes that the costs depend on a number of factors besides the penetration of wind on the utility's system. Exhibit TW-3 (in Table 1 and Figure 1) shows that the wind integration costs are between about $2 to $3 per MWH for wind penetration of 6.5% (ie, the penetration resulting from the proposed Java Wind Project on the entire 3-state Montana-Dakota system).

Q. What is the significance of your comment that integration costs depend on a number of factors?

A. Three of the five data points that Mr. Woolf uses to characterize the cost of wind integration for wind penetration levels under 7.5% are related to systems with a significant amount of hydroelectric energy. Mr. Woolf notes "hydro plants incur low costs by being on line and can respond very rapidly to changes in load" (Exhibit TW-3, page 3). Thus, the costs reported by BPA, Dragoon, and PacificCorp are likely to be higher if the same study were performed for a utility that has no hydro resources.

Q. Do you agree with Mr. Woolf's recommendation that Montana-Dakota develop estimates of such costs based on an assessment of the specific

conditions relevant to Montana-Dakota before wind integration adjustments are included in the PPA?

A. No. The evidence provided by both Mr. Woolf and myself supports inclusion of the generally documented cost of integrating wind in utility systems in MAPP and other areas consistent with other cost estimates used in this proceeding.

Q. Do you have a recommendation on this topic?

A. Yes. I recommend that a PPA include an amount of $2 per MWH for wind integration costs, based on the low end of the range of estimates from existing studies. I further recommend that this amount is subject to change by Montana-Dakota, with the PPA having a specific provision that allows Montana-Dakota to substitute a utility-specific wind integration cost amount determined in actual experience that would be in effect from a certain date (eg, starting in the 3rd year of the PPA term).

I. PPA TERM

1. Longer PPA term

Q. What are Mr. Woolf's recommendations with respect to the term of any PPA arising from this Proceeding?

A. Mr. Woolf recommends that Montana-Dakota's proposed PPA term of 10 years is too short and that the proposed Java Wind Project should be allowed to select a PPA term that suits them, with potential terms of up to 25 years (Page 34, lines 14 to 16).

Q. What is the expected effect of this recommendation?

A. While Mr. Woolf has not provided an estimate of this recommendation, I anticipate that Superior would select the longest available PPA term if given the opportunity. This would result in increased costs and risks for Montana-Dakota and its customers. The longer PPA term would call for a levelized avoidable capacity price, as shown in Exhibit EDK-4, which would increase the avoided capacity payments for the entire PPA term. The longer PPA term, when combined with Mr. Woolf's recommendation to use stipulated avoided energy prices that are much higher than actual marginal costs in Period 3, presents significant risk to Montana-Dakota that the payments under this PPA will be above market. In addition, the longer term will leading to higher levelized capacity payments that will increase the risk to Montana-Dakota in the event of a default by the proposed Java Wind Project, as discussed in my direct testimony.

Q. Is Mr. Woolf correct in concluding that there is symmetry of risks and obligations for Montana-Dakota and Superior in this case?

A. Mr. Woolf (Page 34, lines 6 to10) takes the position that the risks and obligations of Montana-Dakota and Superior with respect to any PPA arising from this Proceeding are symmetrical. This is incorrect, since the proposed Java Wind Project is almost guaranteed a long-term stream of payments under Mr. Woolf's proposal. Under Mr. Woolf's proposal, Superior is shielded from any exposure to the power market or other factors. With the exception of performance risk, the proposed Java Wind Project will present a low risk investment. Further, the proposed Java Wind Project has the option to default on the front-loaded PPA should financial results not provide returns (eg, if the wind turbines require extensive maintenance or replacement). Montana-Dakota and its customers are left with all the residual market risk from the proposed Java Wind Project. The utility's shareholders are not assured a rate of return under the existing regulatory paradigm and face significant long-term uncertainty associated with changes in market structure. As a result of potential disallowances and changes in market structure, the shareholders face increased risk associated with such a long-term PPA with stipulated prices. Likewise, the customers face a risk that the PPA prices are above market. Finally, this risk is compounded by Mr. Woolf's proposals to over-compensate the proposed Java Wind Project for the amount of avoided capacity and to inflate avoided energy prices in Period 3 by incorporating a component of the capitalized base load generation costs that the utility will not avoid.

Q. Do you agree with Mr. Woolf's analysis that Montana-Dakota should be required to provide a PPA longer than ten years in order to ensure that the wind project will be built?

A. No. I disagree with Mr. Woolf's conclusions (Page 34, line 27 to page 35, line 8) that a PPA term longer than ten years is necessary because wind project developers want such long-term PPAs. The role of PURPA is to provide a market for certain non-utility power projects whereby those qualifying generators can sell their power at the utility's avoided cost. The role of PURPA is not to guarantee a QF an attractive capital structure or to guarantee the financial viability of a QF project.

Q. Do you agree the intent of PURPA is to guarantee financing for proposed qualifying projects?

A. No. Mr. Woolf (Page 35, lines 12 to 23) seems to suggest that the intent of PURPA is to provide a QF developer with the equivalent of cost-of-service regulation, because that would put the QF plant on a "level playing field" with a regulated utility power plant. This is not what PURPA says. Furthermore, under cost-of-service regulation the utility is not guaranteed cost recovery and is subject to risks associated with changes in the market. Mr. Woolf appears to be trying to shield Superior from both of these conditions. The utility also has service obligations that QFs do not have and is subject to ongoing regulatory review that does not apply to QFs.

Q. Do you agree with Mr. Woolf's recommendation to extend the term of the PPA to as long as 25 years?

A. No. The state of the industry, the likely demise of PURPA, and other factors argue strongly against a PPA term of more than 10 years. I disagree with Mr. Woolf's conclusion that it is the utility's responsibility under PURPA to create PPA terms that allow Superior to obtain attractive financing. I also disagree with Mr. Woolf's interpretation (Page 35, lines 12 to 23) that PURPA is a means of providing QFs with a level of financial certainty for investments that is provided for a regulated utility with an obligation to serve. These arguments about creating a level playing field with electric utility generation are simplistic and ignore the significant federal subsidy that wind generation currently receives, current South Dakota property tax abatement benefits, and other benefits that QFs receive.

2. <u>10-year re-estimation of prices</u>

Q. What does Mr. Woolf recommend with respect to revising the prices in the PPA?

A. Mr. Woolf recommends that the parties consider a provision in the PPA that would result in a "re-estimation" of avoided costs after the first ten years for the remaining term of the PPA (Page 35, lines 26 to 30).

Q. Would this re-estimation be meaningful?

A. No. If Mr. Woolf's other recommendations were adopted, such a re-estimation would be virtually meaningless. The avoided capacity payments under Mr. Woolf's proposal are based on a generic combustion turbine unit and the amount of avoided capacity from the proposed Java Wind Project is fixed at 10.6 MW, so there are few capacity factors that would change. Mr. Woolf's proposed avoided energy prices are based on the marginal cost of energy from a new baseload coal station plus the "capitalized energy" adder, so that there are few energy factors that would change. Despite Mr. Woolf's comment that "recent cost and market information" (Page 36, line 3) would inform this re-estimation process, I see little impact of any market information on the process.

Q. Under what conditions would you recommend a PPA longer than ten years?

A. A PPA with a term longer than ten years is only appropriate if the prices are based upon ten-year forecasts and the PPA includes a termination provision should PURPA be repealed.

Q. How does your proposal differ from Mr. Woolf's recommendation to renegotiate prices after ten years?

A. Updating of capacity costs to reflect current market conditions is consistent with my proposal to use MISO locational costs for energy payments in that it protects customers from paying too much for QF power and appropriately shifts the risks and benefits back to the generator. However, Mr. Woolf's proposal requires one critical modification. Since, Montana-Dakota's obligation to purchase the QF power is the result of the PURPA regulation, Montana-Dakota should have the right to terminate the PPA should it no longer have the obligation to purchase the power.

Q. Should Montana-Dakota have the option to terminate the PPA if PURPA is repealed?

A. Yes. Mr. Woolf claims that Superior should be able to have a longer-term PPA as a result of his interpretation of the intent of PURPA. However, he appears to ignore the reality that the purchase obligations under PURPA may be repealed. If Congress decides to repeal PURPA, then the obligations to the PPA should not be in force and the then applicable laws, if any, should govern the sale of the power.

III. MR. BENNET'S TESTIMONY

Q. What does this section of your testimony cover?

A. In this section of my testimony, I respond to the testimony of Mr. Bennett.

Q. Does Mr. Bennett reach conclusions with which you agree?

A. Yes. I agree with several of Mr. Bennett's conclusions:

- That a market-based avoided energy approach is best (Page 3, lines 4 to 20 and Exhibit A)
- That the term of any PPA should be limited to ten years or less (Page 3, line 22 to page 4, line 3)
- That QF avoided cost calculations should focus on actual generation costs and not incorporate environmental attributes (Page 4, lines 4 to 22)

Q. What did Mr. Bennett observe about Superior's estimates of the output of the proposed Java Wind Project?

A. I find Mr. Bennett's observations about the likely overstatement of the capacity factor of the proposed Java Wind Project compelling; this provides support for the conclusion that the Superior estimates of output may be overstated and unreliable.

IV. OTHER ISSUES

Q. What does this section of your testimony cover?

A. In this section of my testimony, I address several other issues that have arisen since 31 January 2005.

Q. What issues have arisen since 31 January 2005?

A. There are several, including:

- Interconnection and firm transmission costs
- MISO market progress

A. INTERCONNECTION AND FIRM TRANSMISSION

Q. What happened with respect to interconnection and firm transmission costs?

A. It is my understanding that recent developments related to the interconnection costs for the proposed Java Wind Project suggest that there are likely to be disparities between the Superior position and the Montana-Dakota position. In recent telephone conferences between Montana-Dakota, Superior, and MISO regarding and interconnection agreement for the Java facility, Superior asserts that Montana-Dakota should be responsible for the costs of interconnecting the proposed Java Wind Project in accordance with FERC Order 2003-B, regardless of whether the proposed Java Wind Project is selling power to Montana-Dakota as a QF under PURPA.

Q. Why is it inappropriate for Montana-Dakota to pay for the costs of interconnecting the proposed Java Wind Project?

A. First, this is inconsistent with PURPA. Section 292.306 states that: the QF must pay interconnection costs. Second, the Montana-Dakota avoidable unit costs include the complete cost of interconnection and obtaining firm transmission (ie, an amount of $90 million or $150 per kW). To the extent that the proposed Java Wind Project receives avoided capacity payments, Superior will receive payment for interconnection and transmission costs. Montana-Dakota and its customers should not have to pay for these costs twice-once in the capacity payments and again in interconnection agreement credits. If Superior is to receive credits for interconnection and transmission system upgrades through the interconnection agreement, then the avoided transmission and interconnection costs should be subtracted from the avoided capacity payments.

B. MISO PROGRESS

Q. Has there been progress in the MISO market since 31 January 2005?

A. Yes. MISO announced the establishment of a fourth trading hub in Minnesota and certified to the FERC that it is ready for an April start for its Day 2 energy market.

V. CONCLUSIONS

Q. What are your conclusions?

A. I discuss and support these conclusions in my testimony.

- Mr. Woolf's recommendations for avoided capacity and energy payments are inconsistent with PURPA and with Order F-3365 and will harm Montana-Dakota customers.
- Mr. Woolf's recommendation regarding inclusion of environmental externalities in avoided costs is an inappropriate attempt to expand PURPA.
- Mr. Woolf's recommendation that Montana-Dakota should only be allowed to collect wind integration costs if they conduct a new analysis is without merit.
- Mr. Woolf's recommendation to extend the term of the PPA to be longer than ten years is inconsistent with the state of the industry, the likely demise of PURPA, and other factors.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE FILING BY SUPERIOR RENEWABLE ENERGY LLC ET AL. AGAINST MONTANA-DAKOTA UTILITIES CO. REGARDING THE JAVA WIND PROJECT)	EL04-016

AFFIDAVIT

City/County of District of Columbia : SS
State of ____________

Edward D. Kee, being first duly sworn, deposes and says that the Rebuttal Testimony of Edward D. Kee submitted in the above-captioned proceeding was prepared by him, with the assistance of others working under his direction and supervision, that he is familiar with the contents thereof, and that the statements set forth therein are true and correct to best of his knowledge, information and belief.

Edward D. Kee

Subscribed and sworn before me this 11 day of March 2005

Notary Public

My Commission expires: Miraval E. Suarez
Notary Public, District of Columbia
My Commission Expires 1-1-2008