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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE PETITION OF WASATCH WIND, LLC FOR APPROVAL OF A CONTRACT FOR THE SALE OF CAPACITY AND ENERGY FROM THEIR PROPOSED QF FACILITIES	DOCKET NO. 06-035-42
IN THE MATTER OF THE APPLICATION OF PACIFICORP FOR APPROVAL OF POWER PURCHASE AGREEMENT BETWEEN PACIFICORP AND SPANISH FORK WIND PARK 2, LLC	DOCKET NO. 06-035-76

PREFILED PRELIMINARY DIRECT TESTIMONY OF RICHARD S. COLLINS

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Wasatch Wind hereby submits the Prefiled Testimony of Richard S. Collins in this docket.

DATED this 12th day of January, 2007.

Richard S. Collins

/s/_____
Richard S. Collins
Representing Wasatch Wind

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was sent by United States mail, postage prepaid, or by email this 12 day of, January 2007, to the following:

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PREFILED TESTIMONY

Of

RICHARD S. COLLINS

On behalf of Wasatch Wind

IN THE MATTER OF THE PETITION OF WASATCH WIND, LLC FOR APPROVAL OF A CONTRACT FOR THE SALE OF CAPACITY AND ENERGY FROM THEIR PROPOSED QF FACILITIES

Docket No. 06-035-42

IN THE MATTER OF THE APPLICATION OF PACIFICORP FOR APPROVAL OF POWER PURCHASE AGREEMENT
BETWEEN PACIFICORP AND SPANISH FORK WIND PARK 2, LLC

Docket No. 06-035-76

January 12, 2007

Q. Please state your name and occupation.

A. My name is Richard S. Collins. I am an Associate Professor of Economics and Finance at Westminster College located at 1840 South 1300 East, Salt Lake City, UT 84108.

Q. On whose behalf are you filing testimony in this Docket?

A. Wasatch Wind, LLC

Q. Have you submitted testimony to this Commission before?

A. Yes. I submitted testimony in Docket 03-035-14, the QF avoided cost docket that determined a method for calculating avoided costs and its reconsideration hearing that addressed transmission issues. I also submitted testimony in the QF related Docket No. 05-035-08 and 05-035-09. In addition, I have filed testimony in Docket No. 06-035-42 which led to a stipulated Power Purchase Agreement between Wasatch Wind and Rocky Mountain Power on the Spanish Fork Wind Park 2.

Q. Do you have experience in utility regulatory matters?

A. Yes. Prior to my position at Westminster College, I worked for the Public Service Commission of Utah for approximately 13 years.

SUMMARY OF TESTIMONY

Q: What is the purpose of your testimony in this docket?

A: I briefly explain the difficulties associated with determining avoided transmission line losses for a small QF. Unfortunately there is no plain and simple way to determine line losses without using complex methods and models that require

simplifying assumptions which inevitably will be disputed by parties. I briefly review the previous testimony on avoided line losses that has been presented to the Commission as of this date.

I outline different methods for estimating line losses and provide results of our findings on avoided line losses associated with the Spanish Fork 2 Wind project. I address the strengths and weaknesses of these methods and present our conclusions. In addition, I offer a simple method for determining avoided line losses for small Utah QFs under 20 MWs that will minimize administrative time and preserve regulatory resources as well as provide appropriate price signals on where QFs should locate their facilities.

BACKGROUND

Q: Can you briefly review the previous testimony on avoided line losses and explain why the Commission did not provide a decision on this issue.

A: I will try. On February 24, 2006, the Commission heard testimony on avoided transmission line losses in its reconsideration hearing in Docket No. 05-035-14. The Commission found that the evidence on the record was insufficient to determine a generic method for determining avoided line losses and deferred judgment on the issue. In that proceeding, the Commission heard testimony from the Company and Wasatch Wind that the determination of line losses on an individual case by case basis is extremely difficult and burdensome, a simplified method is preferred. (See Testimony of Bruce Griswold and Richard Collins)

The Company recommended a method that uses PacifiCorp's FERC

OATT calculation of average line losses to determine the adjustment for QF line losses. The Company recommended eligibility for line losses be determined by comparing the QFs distance to the Utah Load to the proxy plants distance to the Utah Load. If the QF is located closer than the proxy resource to the Utah load then the QF receives line loss compensation based on the Company's FERC OATT tariff rate. If the QF delivers at the transmission level it receives the OATT transmission rate and the OATT distribution tariff rate if it delivers at the distribution level. The Company further recommended that only firm thermal resources be eligible for line losses, a recommendation that the Commission rejected. The Commission found that all QFs are eligible for line losses. The Division recommended a similar method based on the differential distance between the QF and load and the proxy resource and load. However, the Commission found that distance criteria as proposed were inexact; it questioned whether such methods would insure ratepayer neutrality.

Q: Did Wasatch Wind encounter any difficulties in securing expert witnesses in this case?

A: As described in our petition for delay of proceedings, we found that highly qualified local engineering consulting firms who were very acquainted with the Rocky Mountain's transmission system could not represent us because of conflict of interest clauses or fear of jeopardizing their business relationship with Rocky Mountain Power. We had a difficult time finding expertise that was acquainted with Utah's transmission system. We stress that we are not accusing Rocky

Mountain Power of any mal-intent or wrongdoing, but we feel that it is important for the Commission to be aware of this fact and that other QFs may well experience the same situation.

Q: Were you able to secure some expert consultants for this proceeding?

A: Yes, we were able to sub-contract with Michael Unger of Elcon Associates to direct the running of some of the power flow models and compile results. Mr. Unger will submit written direct testimony in this proceeding that shows our modeling results. We will have him available by telephone at the hearing.

Q: What has Wasatch Wind discovered in its attempt to analyze line losses for its project?

A: Our discussions with a number of consulting firms have led us to conclude that an industry standard for calculating line losses does not exist. This is particularly true when the issue is placed within the context of PURPA which requires comparing a QF facility to the utility's avoided resource. This makes the calculation conceptually difficult. Even when a method is chosen, the modeling and data requirements make the process very time consuming and expensive. The time and effort to engage in these studies appears to be cost prohibitive particularly for a small QF under 20 MWs.

Q: Did you request that the Company run certain power flow studies?

A: Yes, we did. In Data Request 5.2, 5.3 and 5.4 we requested that the Company make a series of runs that could provide information to calculate the lines losses associated with Spanish Fork project. We requested that they perform a summer

and winter scenario with and without the Spanish Fork wind project and with and without the Wolverine wind project. However, the Company answered the data requests with the following. "PacifiCorp has not performed the requested study and therefore has none of the requested results." In addition, we requested the results of any power flow studies that they perform in the future on these two facilities, to date we have not received any response.

Q: Why did you ask the Company to perform these studies rather than perform them yourself?

A: That is a legitimate question; first Wasatch Wind does not own a power flow model. To gain access to one requires paying consultants to run the model, this is expensive. In addition, there are several different WECC base cases that can be used and they span a number of years. It is our understanding from the technical conference on line losses with PacifiCorp that it either owns a power flow model or has access to one. We felt that having one set of power flow runs performed by the Company with input from both parties on the assumptions and base models would avoid controversy about such issues. These issues and attendant expenses are precisely the reason why FERC has avoided case by case calculation of transmission line losses and uses a simplified generic method based on average system losses.

LINE LOSS METHODS AND RESULTS

Q: What methods did you investigate to estimate the line losses associated with the Spanish Fork project?

A: We looked at a number of methods to try to estimate line losses. First, we tried to determine the path and the distance from the point of interconnection of the wind facility to Rocky Mountain's load. This requires tracing the power as it steps up and steps down to different voltages which in and of itself creates line losses. The Spanish Fork wind project is 4.5 miles from Mapleton (Rocky Mountain load) and connects at 46kV level and is not stepped up or down. The Wolverine wind project, the QF proxy, runs 14 miles to its point of interconnection with the PacifiCorp system at Goshen and is stepped up to 161kV. According to the Company's answer to data request 2.1, power travels from Goshen to four different locations. It travels 4 miles to Spud with a step down to 46kv. From Spud to travels an additional mile to Shelley. In addition, power flows from Goshen to Idaho Falls which is 12 miles away and the step down is to 46kV and power flows to Ammon some 16 miles away with a step down to 69kV. With this crude comparison of distances and step downs between Spanish Fork and Wolverine one can conclude that the Spanish Fork facility incurs fewer losses. However, it should be stated that this crude method does not measure where the power actually flows or the impacts on the system as a whole and therefore is not recommended for use.

Q: Aren't there power flow models that would provide a better estimate of line losses?

A: Yes, there are a number of proprietary computer models designed to simulate the actual flow of electricity with the electrical system. Generally these programs rely on input data from a transmission organization such as the Western Electrical Coordinating Council, WECC. These models can simulate the flow of electricity with or without a given resource. One can then compare the delivered power with and without the resource and thus calculate the line losses. This provides a much more precise and dynamic analysis.

Q: Will the output of these models produce unambiguous results that will lay to rest this perplexing problem of calculating line losses?

A: Unfortunately, the models will not give us an unequivocal answer to the issue of line losses. There are a number of issues that must be resolved. First, the model results only provide a snapshot of the system at a moment in time. To definitely measure line losses, one would have to run the model for every hour in every year that the resource would be operating. In this case it would be every hour for twenty years. In addition, one would want to run different load scenarios to capture the range of possible future events. Plus, the results are only valid if the assumptions of the base case prove true in reality. Unfortunately, every run is expensive, thus a definitive conclusion may cost more than the value of the avoided line losses.

The second issue concerns the critical assumptions made regarding which generator gets backed down when a new resource is placed on the system. Different assumptions will produce very different results.

Q: Did Wasatch Wind perform any power flow studies to estimate the avoided line losses associated with the Spanish Fork project.

A: Yes, under Mike Unger's direction we ran a number of model runs. The results are presented in his Exhibit 2.1. A power flow model developed by Power World was used along with various Western Electric Coordinating Council ("WECC") base case models. The WECC has a number of base case models that contain various assumptions about loads and resources. Base cases have been constructed for a specific year, season and load condition. For example, we employ a base case that assumes heavy load conditions in the summer of 2010 and 2006. In another run we employed a base case for heavy load conditions in the winter of 2006 and 2011. These models provide a snapshot of the conditions on the system and how changes in resources can affect the system and attendant line losses.

Q: How did your team decide what generators to back down when the Spanish Fork wind project's output was added to the system?

A: In our first model run, we decided to back down 19 MWs of power produced at Wolverine and inject it into the Spanish Fork substation. We then compared these line losses with the base case. We found that this led to a reduction in line losses ranging from 4.68 to 1.79 depending on the year, season and load conditions. We believe that this provides a direct comparison of resulting line losses associated

with power delivered at Wolverine versus power delivered at Spanish Fork.

Q: Were other models runs made that backed down other generators?

A: Yes, they were. To get a more realistic view of which generators to back down we relied on information provided by the Company's GRID model runs in response to our data request 2.2 and 2.3 We requested a Grid model run with and without the output from our Spanish Fork wind project and with and without Wolverine. The GRID output indicates which generators will be backed down. The results show that either thermal resources, generally located in Utah, i.e., Hunter, Huntington, Current Creek, etc. or purchases and sales transactions are changed to accommodate the additional wind power. The avoided market transactions generally occurred at one of three locations: COB, Mid Columbia or Four Corners. To simulate the system we assumed that if a purchase or sale was made at one of these trading hubs then a generator close to the hub would be backed down.

Q: What were the results of the model runs and what conclusions do you draw from the results?

A: As shown in Exhibit 2.1, when a direct comparison was made of taking 19 MWs of power from the Wolverine interconnection and injecting it into the Spanish Fork interconnection, the results show that the PacifiCorp eastern control system experiences fewer line losses. Based on the five runs made, the average avoided line loss is 3.2%.

To compare the line losses associated with backing down other generation,

we ran two separate model runs; one for Spanish Fork with and without the power from its facility and one for Wolverine with and without its power. We then took the differences between the two estimated line losses to determine the avoided line loss for Spanish Fork wind project. This procedure was done twice for each of the three generators, once for summer and once for winter, for a total of six model runs. In five out of the six comparisons, Spanish Fork wind project provided significantly fewer line losses than Wolverine. The highest differential was over 8% with an average of 3.37% in line loss savings. Only for the winter of 2010 under heavy load conditions did the model indicate that Wolverine would lower line losses for the PacifiCorp system compared to our project.

Q: What do you conclude from these model results?

A: The results show that Spanish Fork wind project will produce fewer line losses than Wolverine wind project and therefore its avoided cost rate should be changed to reflect the added value that our facility provides to the system. We recommend that an adjustment to rates be made that reflects the average avoided line loss produced by our study.

Q: You mentioned a simplified alternative that the Commission could adopt to eliminate many of these controversies and minimize the regulatory burden on all parties. Could you explain your alternative?

A: Yes, even if model is accepted by parties as a legitimate method to estimate avoided line losses on a case by case basis, there would still be the issue of which year, which base case, which load conditions should be used. In addition, all

parties involved will expend significant resources performing model runs. This puts the small developer at a severe disadvantage. The alternative I recommend is to simplify the process so that resources are preserved and yet ratepayers are protected and the Commission sends appropriate price signals regarding preferred location of generating facilities. The simple solution is to grant QFs that are located within a load bubble, such as the Wasatch load bubble, credit for line losses at the FERC OATT transmission level.

Q: Do you have any exhibits to present at this time?

A: Yes, Exhibit 2.1 presented in Michael Unger's testimony provides the output of our line loss power flow model runs.

Q: Does this conclude your preliminary direct testimony?

A: Yes.