

**Sedway Consulting, Inc.**

**INDEPENDENT EVALUATION REPORT  
FOR MINNESOTA POWER COMPANY'S  
2016 WIND RESOURCE SOLICITATION**

*Submitted by:*

*Alan S. Taylor  
Sedway Consulting, Inc.  
Boulder, Colorado*

June 6, 2017

## TABLE OF CONTENTS

INTRODUCTION AND BACKGROUND .....	1
<i>Overview of Conclusions</i> .....	2
ACITIVITIES PRIOR TO THE RECEIPT OF PROPOSALS .....	2
RECEIPT AND EVALUATION OF PROPOSALS .....	3
<i>Description of Sedway Consulting's Detailed Evaluation Process</i> .....	3
SHORTLISTING OF PROPOSALS AND NEGOTIATION OF CONTRACTS ....	4
CONCLUSION.....	4

### APPENDIX A: OFFER DESCRIPTION AND EVALUATION RESULTS

---

Sedway Consulting, Inc.

---

## Introduction and Background

On July 27, 2016, Minnesota Power Company (MP) issued a Request for Proposals (RFP) for up to 300 MW of power supplies from wind projects to capture the benefits of the Federal Production Tax Credit for customers and comply with a Minnesota Public Utilities Commission directive associated with the utility's 2016 Integrated Resource Plan (IRP). Sedway Consulting, Inc. (Sedway Consulting) was retained by MP to oversee this solicitation for new wind resources and provide an independent evaluation of all proposals. This report provides an assessment of MP's wind resource solicitation from the initial phase of the solicitation (i.e., the issuance of the RFP) through the execution of a final contract for providing energy from the least-cost wind resource for MP's customers.

Sedway Consulting undertook the following tasks as part of this engagement:

- Reviewed and commented on the Resource Request document before the solicitation was launched,
- Participated in MP planning calls/meetings to establish the screening procedures and evaluation methodologies that would be employed in the review and evaluation of all proposals,
- Acquired and archived all important evaluation parameters and market price assumptions prior to bid opening, for use in Sedway Consulting's proprietary evaluation model,
- Independently reviewed all proposals and compiled levelized contract prices and net costs for the ranking of proposals,
- Participated in MP calls/meetings to discuss proposal review results,
- Participated in an on-site meeting to discuss Sedway Consulting's evaluation results and determine an appropriate short list of projects/bidders,
- Reviewed contract redlines and monitored negotiations with shortlisted bidders, and
- Participated in debriefing calls with those bidders who were not shortlisted (and who requested a call).

Sedway Consulting was provided access to all necessary materials and meetings and was able to perform its own evaluation of all of the proposals. Sedway Consulting conferred with MP in periodic calls/meetings to discuss proposal clarification, disqualification, and evaluation decisions.

---

Sedway Consulting, Inc.

## *Overview of Conclusions*

Sedway Consulting developed an economic ranking of all proposals based on their \$/MWh net costs, assessed the qualitative risks and benefits associated with the top-ranked proposals, presented the results to MP and discussed the selection of an appropriate short list of projects and counterparties with whom to commence negotiations. Sedway Consulting concludes that MP conducted fair and appropriate negotiations with those counterparties. Of those projects that were shortlisted, Tenaska's Nobles 2 proposal was the most cost-effective (i.e., lowest \$/MWh net cost). That project will be a new 250 MW wind resource in Nobles and Murray Counties, Minnesota, with an expected commercial operation date of December 31, 2019. Sedway Consulting concludes that MP made the appropriate selection decisions in its solicitation and concurs with the decision to secure wind energy deliveries through the execution of the Nobles 2 Power Partners LLC power purchase agreement for the proposed 20 year term.

This Independent Evaluation Report has a confidential appendix that includes a description of each proposal and an overview of the evaluation results and sensitivity analyses. This material is being afforded confidential treatment to protect participants from having their project pricing and operational information provided to their competitors. Also, MP's customers could be harmed if too much information was made publicly available, allowing some participants to game future solicitations rather than delivering the best renewable projects at the lowest possible prices.

## **Activities Prior to the Receipt of Proposals**

Sedway Consulting had provided independent evaluation services in previous MP wind RFPs and was thus quite familiar with MP's evaluation processes and available planning assumptions. Prior to the receipt of proposals, Sedway Consulting requested and incorporated MP's latest market price forecasts into Sedway Consulting's evaluation model. Sedway Consulting requested MP to provide as much information as possible prior to the receipt of proposals. This, in essence, allowed Sedway Consulting to lock down and archive the basic evaluation parameters for the process. Such information included forecasts of regional market energy prices,<sup>1</sup> cost of capital components, discount rate, and historical locational marginal pricing (LMP) information. These assumptions were incorporated into Sedway Consulting's own evaluation model and formed the basis for independently assessing the benefits and costs of resources that were bid into MP's solicitation.

---

<sup>1</sup> In past MP wind solicitations, Sedway Consulting has also ascribed a value to the capacity of proposed wind resources. In consultation with MP, it was decided that such capacity valuation was not necessary in the current evaluation in that it was dependent on MISO capacity accreditation rules that may change, was likely to be quite similar across all wind projects (and thus would not be a differentiating benefit), and might be inappropriately influenced by bidder-supplied generation profiles.

## Receipt and Evaluation of Proposals

On September 9, 2016, MP and Sedway Consulting received a significant number of proposals in its wind resource solicitation. Submissions were made via email. Both MP and Sedway Consulting reviewed the submitted proposals during September 2016, periodically discussing proposal deficiencies and requests to specific bidders for supplemental information.

The evaluation process entailed a general review of all proposals and the calculation and ranking of levelized energy prices for all proposed options. Instances where proposals were found to be non-compliant or incomplete, bidders were notified and given an opportunity to supplement their proposal materials. The evaluation team focused more of its efforts on the higher-ranked proposals, performing a thorough qualitative assessment of those proposals that appeared to have the best quantitative value for MP's customers. Concurrent with that qualitative analysis, Sedway Consulting undertook the modeling of all proposals to assess their energy benefits; specifically, Sedway Consulting performed detailed modeling to determine each proposal's net cost (described below). Although the levelized price ranking provided a good approximation of how project economics might compare, an assessment of the offers' generation profiles and the energy benefits associated with those profiles provided a comprehensive comparison.

### *Description of Sedway Consulting's Detailed Evaluation Process*

The detailed economic evaluation entailed modeling the bids in Sedway Consulting's Renewable Bid Evaluation Model (RBEM) – a spreadsheet-based tool that determined a proposal's net cost by calculating the present value of the project's costs and subtracting the present value of a proposed facility's hourly energy benefits. The costs in the net cost calculation included contract payments for delivered energy and an imputed debt cost<sup>2</sup> for power purchase agreements (PPA). Energy benefits were the product of the expected hourly generation of a facility and a forecast of hourly \$/MWh energy market prices over the term of the contract. For those offers that did not provide for delivery to the MP.MP MISO node, a sensitivity analysis was performed to assess the impact of LMP differentials between the proposed delivery point and the MP.MP node. Sedway Consulting's evaluation model normalized the net cost by dividing it by the present value of a project's expected energy deliveries, thereby yielding a \$/MWh levelized net cost. In some of Sedway Consulting's past renewable project analyses, this \$/MWh net cost has been a positive number and reflects the premium that a utility must pay for renewable energy relative to "brown" power – the more positive the number, the greater the renewable premium. In the case of MP's 2016 wind solicitation, all of the top-ranked

---

<sup>2</sup> Imputed debt (or debt equivalence) costs are associated with a rebalancing of a utility's debt and equity ratios in light of credit rating agencies' policies that view PPAs as being partially equivalent to debt obligations.

proposals had negative net costs. This may be attributable to the fact that the current wind industry is in a highly competitive phase and wind turbine costs have been declining. Developers appear to be willing to provide wind projects at lower prices than has been the case in the past. Also, the federal renewable Production Tax Credit (PTC) for wind projects will expire for any facilities that are not under construction by December 31, 2019. The extension of that PTC is in question, given the federal government's budget deficits. Thus, many developers are probably eager to commence construction on wind projects as fast as possible, even at low prices. In any case, MP received proposals that were clearly cost-effective, relative to expected energy market prices.

The response to MP's 2016 wind resource solicitation was quite robust: 35 project proposals<sup>3</sup> were submitted. A summary of the projects is depicted in Table A-1 in Confidential Appendix A.

As noted above, Sedway Consulting performed a detailed levelized net cost analysis of all proposals. The results of Sedway Consulting's analysis are depicted in Table A-2 in Confidential Appendix A. The table includes each PPA/project's expected capacity, proposed duration, the \$/MWh levelized net cost, and the levelized \$/MWh components of that net cost.

## **Shortlisting of Proposals and Negotiation of Contracts**

On October 17, 2016, Sedway Consulting met with MP personnel from various departments and presented the results of its analysis. After discussing the results, it was decided that a key subset of the top-ranked projects should be shortlisted, as described further in Confidential Appendix A. Negotiations commenced with the counterparties that proposed these projects and continued through the spring of 2017. One of those shortlisted projects was the Tenaska Nobles 2 proposal. Sedway Consulting concurred with MP's decision to make a final selection of that project and execute the Tenaska Nobles 2 contract. The other shortlisted proposals had higher net costs and other attributes that made them less attractive for meeting MP's resource needs, as described further in Confidential Appendix A.

## **Conclusion**

Sedway Consulting was provided access to all necessary materials and meetings and was able to perform its own detailed evaluation of the proposals received in MP's 2016 wind resource RFP.

Sedway Consulting monitored the back-and-forth email traffic between MP and the wind resource bidders and believes that MP treated all bidders consistently and fairly. Sedway

---

<sup>3</sup> Many of these project proposals included mutually-exclusive options (e.g., flat versus escalating pricing, different terms); thus, there were many more distinct offers.

Consulting also monitored the negotiation process and believes that MP treated the shortlisted counterparties consistently and fairly.

Sedway Consulting believes that MP selected the best wind project for meeting its IRP requirements.

---

Sedway Consulting, Inc.

---

**PUBLIC DOCUMENT  
TRADE SECRET DATA EXCISED**

**CONFIDENTIAL  
Appendix A  
Offer Description and Evaluation Results**

This has been designated as non-public in its entirety, as the document includes a summary of the terms of the proposals received in response to Minnesota Power's RFP for wind resource projects and the independent evaluation of those proposals. This information derives independent economic value from not being generally known to, or readily ascertainable by, others who could obtain economic advantage from its disclosure or use and thus constitutes information Minnesota Power considers to be trade secret, as defined by Minn. Stat. § 13.37, subd. 1(b).

This Appendix A of the Sedway Consulting Independent Evaluation Report for Minnesota Power Company's 2016 Wind Resource Solicitation was prepared June 6, 2017, by Alan S. Taylor, Sedway Consulting, Inc.

---

Sedway Consulting, Inc.

*Confidential*

A-1