

---

---

**STAFF MEMORANDUM**

---

---

**TO:** COMMISSIONERS AND ADVISORS  
**FROM:** BRITTANY MEHLHAFF AND AMANDA REISS  
**RE:** EL22-025 - In the Matter of Otter Tail Power Company's Petition for Approval of  
Tariff Revisions to Rate Schedule, Section 13.01 Energy Adjustment Rider  
**DATE:** November 15, 2022

---

**BACKGROUND**

On September 30, 2022, Otter Tail Power Company (Otter Tail) filed a petition requesting approval of revisions to its tariff, specifically Section 13.01 Energy Adjustment Rider (EAR), related to Otter Tail's Hoot Lake Solar project as well as other necessary and administratively advantageous language changes.

Otter Tail received approval from the Minnesota Public Utilities Commission (MPUC) for 100 percent recovery of the Hoot Lake Solar project from Minnesota customers. Thus, Otter Tail proposes to modify the calculation of costs included in Otter Tail's South Dakota EAR to account for Hoot Lake Solar generation. Otter Tail proposes to calculate the cost of purchased power for the hours Hoot Lake Solar is generating and include them in the monthly calculation of the EAR. Otter Tail proposes to use the LMP market price for Hoot Lake Solar generation to calculate the costs South Dakota customers will pay through the EAR. Otter Tail states this proposed change is not intended to increase South Dakota's EAR rates, but rather avoids an unintended EAR rate decrease and maintains consistency in the EAR rate calculation as if Hoot Lake Solar was not included in Otter Tail's generation fleet. Otter Tail estimates the total system annual avoided purchased power cost resulting from Hoot Lake Solar is \$2-3 million. South Dakota's share of these costs would be added to the EAR.

In addition, Otter Tail requests other changes to its EAR rate schedule including 1) revising each month's EAR effective date to calendar day 1 instead of the effective date of billing Cycle 1; 2) correcting clerical errors in the naming of Service Categories and Section number designations on Sheet No. 1; and 3) correcting an error in the header versioning for Sheet No. 3.

Otter Tail proposes an effective date of January 1, 2023.

**STAFF ANALYSIS**

Staff reviewed the filing and sought additional information through discovery. Staff's analysis focused on ensuring customers will see benefits associated with Otter Tail's decision to allocate 100% of Hoot Lake

Solar to Minnesota customers. Staff has no concerns with the other minor changes and corrections Otter Tail proposes to its EAR and focuses its comments here on the Hoot Lake Solar project.

### **Hoot Lake Solar Project Background**

The Hoot Lake Solar project will consist of approximately 150,000 solar panels with a total capacity of 49.9 MW to be constructed at the site of Otter Tail's retired Hoot Lake power plant in Fergus Falls, Minnesota. The annual energy output is expected to be approximately 105,000 megawatt hours at a projected net capacity factor of approximately 24%.<sup>1</sup> Importantly, the site location allows Otter Tail to utilize existing interconnection rights. The replacement facility must be completed within three years of the retirement of the existing facility in order to utilize the existing interconnection rights.<sup>2</sup> Otter Tail expects Hoot Lake Solar to be operational by mid-2023.<sup>3</sup>

Minnesota's Solar Energy Standard (SES) requires Otter Tail to meet at least 1.5 percent of its total retail electric sales in Minnesota with solar energy.<sup>4</sup> Hoot Lake Solar will help Otter Tail fulfill its SES obligations as well as its Renewable Energy Standard (RES) obligations.<sup>5</sup> Hoot Lake Solar fulfills a Minnesota SES need identified in Otter Tail's 2016 Integrated Resource Plan (IRP) and also fulfills the Minnesota PUC's directions for Otter Tail to complete a competitive-bidding process to procure approximately 30 MW or more of installed solar capacity. Otter Tail identified Hoot Lake Solar as being the best alternative for Minnesota customers through this process.<sup>6</sup>

Based on the differing historical justifications regarding resources in Minnesota versus the Dakotas, Otter Tail asked the Minnesota PUC to approve allocating 100 percent of the Hoot Lake Solar project to Minnesota customers. The Minnesota PUC approved Otter Tail's request in Minnesota PUC Docket No. E017/M-20-844.

### **Analysis of Hoot Lake Solar Proposed Regulatory Treatment**

As stated in its petition, Otter Tail operates its generation facilities on a system basis. Therefore, the addition of Hoot Lake Solar on Otter Tail's system will provide zero fuel cost energy benefits to all Otter Tail customers, regardless of which customers are paying the costs of the facility, if no modification to the EAR is made. Since the MN PUC approved 100% recovery of Hoot Lake Solar by Minnesota customers, Otter proposes to exclude the costs associated with Hoot Lake Solar from South Dakota base rate revenue requirements and to modify the South Dakota EAR so that the net impact to South Dakota customers is zero, as if the Hoot Lake Solar project was not on Otter Tail's system.

---

<sup>1</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 7 of 22.

<sup>2</sup> Otter Tail's Response to Staff DR 1-9.

<sup>3</sup> Petition, page 1.

<sup>4</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 8 of 22.

<sup>5</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 9 of 22.

<sup>6</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 10 of 22.

Otter Tail's proposed mechanism for adjusting the South Dakota EAR takes the actual hourly MWh output of Hoot Lake Solar and multiplies that output by the corresponding hourly LMP at the Hoot Lake Solar generation node to determine the avoided cost of purchased power resulting from Hoot Lake Solar output. The resulting total avoided cost of purchased power (or fuel cost benefits) will be added to the monthly South Dakota EAR rate calculation. Otter Tail estimates the total system annual avoided purchased power costs to be \$2-3 million, or \$200,000-300,000 at the South Dakota level.

Staff sought additional information through discovery to further understand Otter Tail's decision to allocate 100% of the Hoot Lake Solar costs to MN customers and the benefits of the proposed methodology to South Dakota customers.

#### *IRP Analysis and Levelized Cost of Hoot Lake Solar*

In accordance with Otter Tail's 2016 IRP results, the MN PUC approved a five-year action plan that involved the addition of 30 MW of solar which was modeled at a fixed cost of \$80/MWh.<sup>7</sup> The MN PUC's direction to Otter Tail to procure 30 MW of Solar fulfilled the SES requirement, not a capacity need.<sup>8</sup> Subsequently, Otter Tail conducted revised resource planning analysis which indicated that 100 MW of solar would be cost-justified for Otter Tail's total system at or below **[Begin Confidential]** [REDACTED] **[End Confidential]**.<sup>9</sup> However, ND and SD IRP analysis typically excludes externality values. When Otter Tail excluded externality values from this analysis, the levelized cost per MWh that would be necessary for the solar project to be a least cost resource was at or below **[Begin Confidential]** [REDACTED] **[End Confidential]**.<sup>10</sup> Otter Tail conducted this analysis to model a 100 MW solar resource on a system-wide basis in order to demonstrate the cost-effectiveness of allocating the 49.9 MW Hoot Lake Solar project 100% to Minnesota customers, which would roughly be the same size as Minnesota's share of a traditionally allocated system-wide 100 MW resource.

In comparison to Otter Tail's resource planning analysis, the levelized cost estimate of the Hoot Lake Solar Project is **[Begin Confidential]** [REDACTED] **[End Confidential]**.<sup>11</sup> Otter Tail's ability to reuse the interconnection and other facilities of the retiring Hoot Lake Coal Plant was a key factor in securing the levelized cost for Hoot Lake solar that was aligned with its revised Minnesota least cost resource planning analysis. However, comparing the levelized cost of Hoot Lake Solar to the levelized cost required for a system resource to be considered least cost without externality values, Otter Tail determined Hoot Lake Solar was not cost effective for South Dakota customers.

#### *Hoot Lake Solar Revenue Requirement Compared to Otter Tail's Proposed Treatment*

The lack of cost effectiveness of the Hoot Lake Solar project for South Dakota customers is further justified when reviewing Otter Tail's proposal in this docket. To analyze the impact of Otter Tail's

---

<sup>7</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 11 of 22.

<sup>8</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 17 of 22.

<sup>9</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 17 of 22.

<sup>10</sup> Otter Tail's Response to Staff DR 1-3.

<sup>11</sup> Otter Tail's Response to Staff DR 1-1, Attachment 1, page 11 of 22.

proposal, Staff compared the two alternatives of South Dakota customers paying for the South Dakota share of the Hoot Lake Solar project and Otter Tail’s proposal to adjust the EAR.

Otter Tail provided that South Dakota’s share of the Hoot Lake Solar project revenue requirement would be approximately \$600,000 annually. In addition to paying for the project revenue requirements in base rates, South Dakota customers would receive fuel cost benefits of approximately \$200,000-300,000 resulting from revenues from Hoot Lake Solar reflected in MISO prices included in the EAR. This results in a net cost to South Dakota customers of approximately \$300,000-400,000.

Alternatively, Otter Tail proposes to exclude the revenue requirements associated with the Hoot Lake Solar project from South Dakota base rates in future rate cases or riders. However, since fuel costs are allocated on a system basis, South Dakota’s EAR will still include the revenues from Hoot Lake Solar reflected in MISO prices, providing an additional benefit to South Dakota customers of reduced fuel costs. Since South Dakota customers are not paying for the Hoot Lake Solar revenue requirements, it is not appropriate for them to keep the benefits.

Otter Tail’s proposal in this docket simply aims to reverse the Hoot Lake Solar revenues so that the net impact to South Dakota customers is zero. Since Hoot Lake Solar revenues reduce the net MISO billings, Otter Tail must calculate these revenues in order to back out this reduction. Otter Tail will take the actual hourly MWh output of Hoot Lake Solar and multiply that output by the corresponding hourly LMP at the Hoot Lake Solar generation node to determine the avoided cost of purchased power resulting from Hoot Lake Solar output.

When comparing the net cost of approximately \$300,000-400,000 resulting from the Hoot Lake Solar revenue requirement less fuel cost benefits to Otter Tail’s proposal in this docket of a net zero impact to South Dakota customers, South Dakota customers are saving \$300,000-400,000, as shown below.<sup>12</sup>

Revenue Requirement & EAR Benefit			Proposal for SD	
HLS Revenue Requirement	\$ 600,000		HLS Revenue Requirement	\$ -
Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000		Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000
Fuel Clause Benefits (HLS Revenue)	\$ (200,000)		Fuel Clause Benefits (HLS Revenue)	\$ (200,000)
Adjustment to remove HLS revenue from EAR Calc	\$ -		Adjustment to remove HLS revenue from EAR Calc	\$ 200,000
Total System EAR Costs plus HLS Impacts	<b>\$ 10,400,000</b>	or	Total System EAR Costs plus HLS Impacts	<b>\$ 10,000,000</b>
less Total System EAR Costs	\$ 10,000,000		less Total System EAR Costs	\$ 10,000,000
Net Impact to Customers of Adding HLS	<b>\$ 400,000</b>		Net Impact to Customers of Adding HLS	\$ -
			<b>Benefit (Cost) of SD Proposal vs. Traditional Alternative</b>	<b>\$ 400,000</b>

<sup>12</sup> These examples assume a Total System EAR Costs excluding the Hoot Lake Solar MISO revenue of \$10,000,000, for illustrative purposes.

Revenue Requirement & EAR Benefit			Proposal for SD	
HLS Revenue Requirement	\$ 600,000		HLS Revenue Requirement	\$ -
Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000		Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000
Fuel Clause Benefits (HLS Revenue)	\$ (300,000)		Fuel Clause Benefits (HLS Revenue)	\$ (300,000)
Adjustment to remove HLS revenue from EAR Calc	\$ -		Adjustment to remove HLS revenue from EAR Calc	\$ 300,000
Net Impact to Customers	\$ 10,300,000	or	Net Impact to Customers	\$ 10,000,000
less Total System EAR Costs	\$ 10,000,000		less Total System EAR Costs	\$ 10,000,000
Net Impact to Customers of Adding HLS	\$ 300,000		Net Impact to Customers of Adding HLS	\$ -
			<b>Benefit (Cost) of SD Proposal vs. Traditional Alternative</b>	<b>\$ 300,000</b>

This net benefit of \$300,000-400,000 to South Dakota customers will vary depending on the actual price of LMPs at the Hoot Lake generation node. Otter Tail estimated the avoided purchased power costs, or fuel cost benefits, to be \$200,000-300,000 annually at the South Dakota level. If LMPs at the Hoot Lake generation node are higher or lower than those assumed in Otter Tail’s estimation, the avoided purchased power costs will be impacted accordingly. Otter Tail’s estimation included average LMPs in the range of [Begin Confidential] [redacted] [End Confidential].<sup>13</sup> LMPs at the lower end of the range were reflective of market conditions in the 2017-2019 timeframe and the LMPs at the higher end of the range are reflective of forward curves developed in August 2022.<sup>14</sup> The average LMPs for the year at the Hoot Lake generation node applied to Hoot Lake output would need to be greater than approximately [Begin Confidential] [redacted] [End Confidential]<sup>15</sup> in order for the avoided purchased power costs to exceed \$600,000 at the SD level.

If fuel cost benefits are under \$600,000, South Dakota customers are better suited with the proposed method in this docket. Once the fuel cost benefits reach \$600,000, under the scenario of South Dakota customers paying for the Hoot Lake Solar revenue requirement and receiving fuel cost benefits in the EAR, the net cost to SD customers would be \$0 as the revenues received from Hoot Lake generation would completely offset the revenue requirement. Under the proposed treatment for SD customers, the net impact would also be \$0 when the revenues were backed out of the EAR calculation. With fuel cost benefits at \$600,000 South Dakota customers would be neutral as to which method was chosen. However, If the fuel cost benefits were greater than \$600,000, the net impact to SD customers under traditional allocation of the revenue requirement would flip to a benefit as the revenues received from Hoot Lake generation would outweigh the revenue requirement and, in that case, it would be more beneficial for customers to pay for the revenue requirement and receive the fuel cost benefits rather than the method proposed in this docket. The examples below illustrate the impacts to customers at the break-even point of \$600,000 in fuel cost benefits and at a level above this break-even point.

<sup>13</sup> Otter Tail’s Response to Staff DR 1-5, Attachment 1.

<sup>14</sup> Otter Tail’s Response to Staff DR 1-5.

<sup>15</sup> Calculated by taking \$600,000 divided by the projected Hoot Lake annual output.

Revenue Requirement & EAR Benefit			Proposal for SD	
HLS Revenue Requirement	\$ 600,000		HLS Revenue Requirement	\$ -
Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000		Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000
Fuel Clause Benefits (HLS Revenue)	\$ (600,000)		Fuel Clause Benefits (HLS Revenue)	\$ (600,000)
Adjustment to remove HLS revenue from EAR Calc	\$ -		Adjustment to remove HLS revenue from EAR Calc	\$ 600,000
Net Impact to Customers	\$ 10,000,000	or	Net Impact to Customers	\$ 10,000,000
less Total System EAR Costs	\$ 10,000,000		less Total System EAR Costs	\$ 10,000,000
Net Impact to Customers of Adding HLS	\$ -		Net Impact to Customers of Adding HLS	\$ -
			<b>Benefit (Cost) of SD Proposal vs. Traditional Alternative</b>	<b>\$ -</b>

Revenue Requirement & EAR Benefit			Proposal for SD	
HLS Revenue Requirement	\$ 600,000		HLS Revenue Requirement	\$ -
Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000		Total System EAR Costs excl. HLS MISO Revenue	\$ 10,000,000
Fuel Clause Benefits (HLS Revenue)	\$ (700,000)		Fuel Clause Benefits (HLS Revenue)	\$ (700,000)
Adjustment to remove HLS revenue from EAR Calc	\$ -		Adjustment to remove HLS revenue from EAR Calc	\$ 700,000
Net Impact to Customers	\$ 9,900,000	or	Net Impact to Customers	\$ 10,000,000
less Total System EAR Costs	\$ 10,000,000		less Total System EAR Costs	\$ 10,000,000
Net Impact to Customers of Adding HLS	\$ (100,000)		Net Impact to Customers of Adding HLS	\$ -
			<b>Benefit (Cost) of SD Proposal vs. Traditional Alternative</b>	<b>\$ (100,000)</b>

Otter Tail indicates that current forward price curves project pricing to be notably stronger than historical pricing during the 2017-2021 time-frame.<sup>16</sup> Otter Tail does not maintain a forecast for the Hoot Lake generation node pricing, but does forecast pricing for the OTP load zone. While recently the LMPs at the Hoot Lake generation node have diverged some from the LMPs for the OTP load zone due to volatility, the OTP load zone LMPs have historically been reflective of the Hoot Lake generation node LMPs.<sup>17</sup> Forward curves developed in August 2022 showing this increase in pricing were used to determine the high end of Otter Tail’s estimated fuel cost benefits of \$300,000, as discussed above. Prices would need to more than double on average in order for the fuel cost benefits to outweigh the Hoot Lake Solar revenue requirement. While no one has a crystal ball to predict where prices will go for the entirety of Hoot Lake Solar’s useful life, Otter Tail’s analysis indicates that based on available information, South Dakota customers are better off not paying for the Hoot Lake Solar revenue requirement as Otter Tail has proposed.

## RECOMMENDATION

Staff recommends the Commission approve Otter Tail’s proposal to adjust the EAR to account for Minnesota customers paying 100% of the Hoot Lake Solar Project, for the reasons discussed above. Staff also recommends the Commission approve Otter Tail’s other requested changes to its EAR tariff.

<sup>16</sup> Otter Tail’s Response to Staff DR 1-6.

<sup>17</sup> Otter Tail’s Response to Staff DR 1-6.