

# **AGENDA for the Zeeland Board of Public Works**

## **PURCHASE POWER COMMITTEE MEETING**

**7:00 a.m., Friday April 21, 2023  
Zeeland Board of Public Works  
350 E. Washington Ave., Zeeland, MI 49464**

1. Call Meeting to Order – Announcement of Quorum
2. Consideration of MPPA Short-Term Bilateral Energy Purchases, 2026 - 2028
3. Adjourn

TO: Chairperson Boerman and Members of the Purchase Power Committee  
 FROM: Robert Mulder – Power Supply & Market Operations Manager  
 CC: Andrew Boatright – General Manager  
 SUBJECT: Recommendation: MPPA Short-Term Bilateral Energy Purchases, 2026 - 2028  
 DATE: April 17, 2023

**Background**

The Zeeland Board of Public Works (BPW) participates in the wholesale power market through the Michigan Public Power Agency (MPPA). That participation is guided by a Power Supply Risk Management Policy approved by the BPW Board, and Zeeland City Council. In accordance with these policies, the BPW must have committed energy resources in place to supply specific levels of anticipated BPW energy requirements extending into the future as specified under MPPA’s ‘Stability Plan’ which the BPW has selected.

To ensure compliance with this policy, the BPW, with the support of MPPA, regularly reviews its portfolio and solicits purchase proposals to strategically address open positions in its energy portfolio.

**Description**

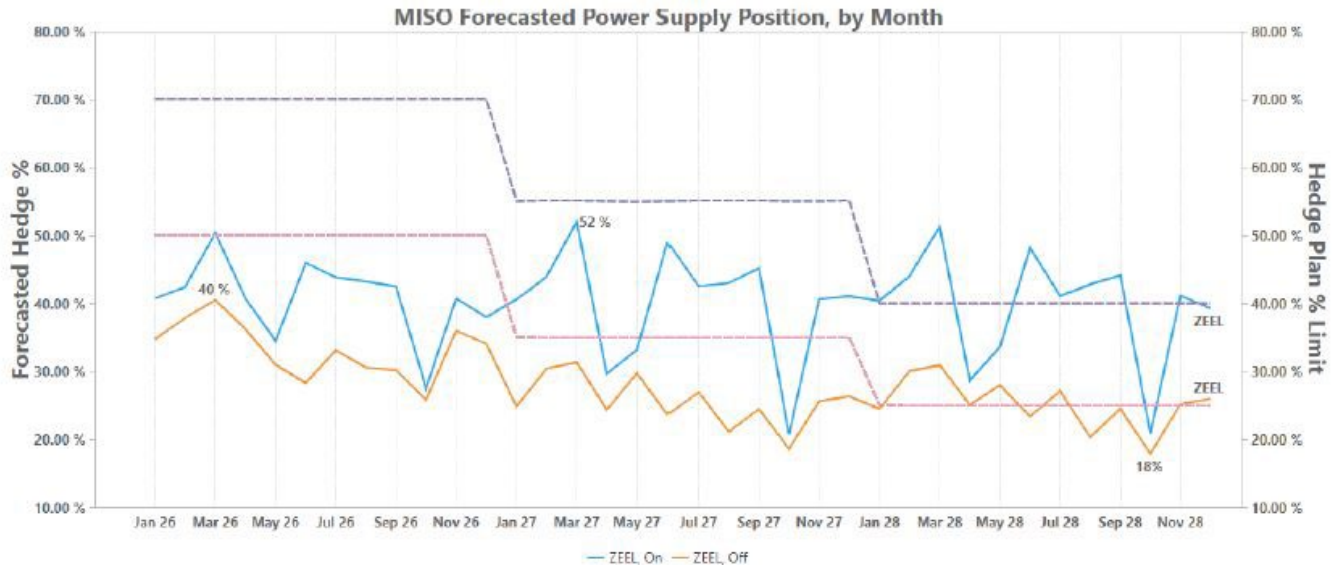
At the February 13, 2023 meeting of the BPW Board, energy purchase transactions for calendar years 2025 – 2028 were recommended and subsequently approved to comply with the BPW’s hedge plan requirements. While awaiting authorization from all MPPA members, upward pressure in market pricing for CY2026 - CY2028 occurred, exceeding the maximum price targets. Accordingly, MPPA was able to transact for CY2025, but not beyond. On April 14, 2023, MPPA issued a revised transaction recommendation to purchase the minimum monthly energy quantities necessary to satisfy the hedge plan during this period. The previously executed PPC dated February 8, 2023, will remain in effect through 2023 (less the transaction volumes associated with the revised PPC), but will only be acted upon if risk management tools indicate favorable pricing.

The recommended purchases include a combination of On-Peak (5x16), Off-Peak (5x8, 2x24), and Around-The-Clock (7x24) transactions, summarized in the table below:

Calendar Year	Delivery Period	Transaction Details			BPW Hedge Position	
		Total Energy (MWh)	Average Price (\$/MWh)	Total Cost (NTE)	Avg. Monthly % Of Forecasted Load	Avg. Monthly % Hedged After Transaction
<b>2026</b>						
	On-Peak (5x16)	23,507.2	\$72.79	\$1,711,150.40	10.0%	50.1%
	Off-Peak (5x8, 2x24)	38,263.2	\$58.61	\$2,242,419.20	17.1%	50.2%
<b>2027</b>						
	ATC (7x24)	26,625.6	\$67.33	\$1,792,744.80	5.4%	38.2%
<b>2028</b>						
	ATC (7x24)	4,221.6	\$66.83	\$282,124.80	2.4%	33.2%
<b>Total</b>		<b>92,617.6</b>	<b>\$65.09</b>	<b>\$6,028,439.20</b>		

The total, not-to-exceed cost associated with these recommended volumes and products at the maximum stated strike prices yields a maximum commitment of \$6,028,439.20, averaging \$65.09 / MWh. These transaction(s) will be for Financially Firm Energy with physical delivery to the MISO Michigan Hub in the Day Ahead Market, at or below the monthly not to exceed limits.

The chart below indicates the BPW’s current hedged resource position forecast prior to the recommended transaction, and the corresponding minimum and maximum hedge thresholds.



**Recommendation**

BPW staff recommends that the aforementioned energy purchase commitments be approved, authorizing the General Manager to commit to the purchase of the following short-term energy products totaling a maximum not-to-exceed cost of \$6,028,439.20:

1. Calendar Year 2026:
  - a. On-Peak (5x16) firm energy up to \$1,711,150.40 for 23,507.2 MWh (\$72.79 / MWh avg.)
  - b. Off-Peak (5x8, 2x24) firm energy up to \$2,242,419.20 for 38,263.2 MWh (\$58.61 / MWh avg.)
2. Calendar Year 2027:
  - a. ATC (7x24) firm energy up to \$1,792,744.80 for 26,625.6 MWh (\$67.33 / MWh avg.)
3. Calendar Year 2028:
  - a. ATC (7x24) firm energy up to \$282,124.80 for 4,221.6 MWh (\$66.83 / MWh avg.)

The BPW’s Energy Risk Management Policy Statement specifies that transaction terms greater than the prompt year but not more than five years are authorized to be made by the Member Authorized Representative (MAR) after approval by the majority vote of the BPW Purchase Power Committee (PPC). The PPC consists of the BPW Chairperson, the General Manager (or alternate MAR), and any one of the remaining BPW commissioners. The terms of the recommended transactions align with these requirements.

**Attachments:**

- MPPA Power Purchase Commitment Authorization (April 14, 2023)
- Recommendation: MPPA Short-Term Bilateral Energy Purchases, 2025 – 2028 (February 9, 2023)



April 14, 2023

**Subject: Power Purchase Commitment Authorization**

The Zeeland Board of Public Works (“Zeeland”), through its Member Authorized Representative, hereby authorizes the purchase of Energy by Michigan Public Power Agency (“MPPA”) on behalf of Zeeland at the following Quantity, Term, Delivery Location and not to exceed price levels. These transactions, if executed by MPPA, are Power Purchase Commitments under the Energy Services Agreement between MPPA and Zeeland.

This Power Purchase Commitment (PPC) is to meet the minimum compliance target for all months in the Hedge Plan year. The previously executed PPC dated February 8, 2023, containing transactions up to the Hedge Plan maximum will remain in effect (less this PPC's transaction volumes) through 2023, but will only be acted upon if risk management tools indicate favorable pricing.

**Energy:**

Delivery Period	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)
Term	Jan 26	Feb 26	Mar 26	Apr 26	May 26	Jun 26	Jul 26	Aug 26	Sep 26	Oct 26	Nov 26	Dec 26
Quantity (MW)	5.5	4.5	0.0	5.3	9.8	2.7	4.4	5.0	5.1	14.2	5.6	7.0
Quantity (MWh)	1848.0	1440.0	0.0	1865.6	3136.0	950.4	1619.2	1680.0	1713.6	4998.4	1792.0	2464.0
Total \$ (not to exceed)	\$179,256.00	\$132,480.00		\$117,532.80	\$203,840.00	\$62,726.40	\$129,536.00	\$126,000.00	\$119,952.00	\$339,891.20	\$120,064.00	\$179,872.00
Price, \$/MWh (not to exceed)	\$97.00	\$92.00		\$63.00	\$65.00	\$66.00	\$80.00	\$75.00	\$70.00	\$68.00	\$67.00	\$73.00
% of Load	9.1%	7.4%		9.2%	15.8%	4.0%	6.2%	6.7%	7.7%	22.8%	9.4%	12.1%
Forecasted Hedge % After Transaction	49.8%	49.8%	50.3%	50.0%	50.2%	50.0%	50.0%	49.9%	50.2%	50.2%	50.1%	50.2%

Delivery Period	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)
Term	Jan 26	Feb 26	Mar 26	Apr 26	May 26	Jun 26	Jul 26	Aug 26	Sep 26	Oct 26	Nov 26	Dec 26
Quantity (MW)	7.0	5.9	4.2	6.2	8.7	11.4	9.3	10.9	9.7	11.5	6.2	7.3
Quantity (MWh)	2856.0	2076.8	1646.4	2281.6	3688.8	4195.2	3496.8	4447.2	3724.8	4508.0	2480.0	2861.6
Total \$ (not to exceed)	\$245,616.00	\$166,144.00	\$97,137.60	\$118,643.20	\$188,128.80	\$213,955.20	\$195,820.80	\$240,148.80	\$201,139.20	\$247,940.00	\$138,880.00	\$188,865.60
Price, \$/MWh (not to exceed)	\$86.00	\$80.00	\$59.00	\$52.00	\$51.00	\$51.00	\$56.00	\$54.00	\$54.00	\$55.00	\$56.00	\$66.00
% of Load	15.6%	12.7%	9.3%	13.9%	19.2%	22.2%	17.3%	19.9%	19.9%	24.4%	14.2%	16.5%
Forecasted Hedge % After Transaction	50.3%	50.5%	49.8%	50.0%	50.1%	50.4%	50.3%	50.4%	50.0%	50.1%	50.1%	50.3%

Delivery Period	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)
Term	Jan 27	Feb 27	Mar 27	Apr 27	May 27	Jun 27	Jul 27	Aug 27	Sep 27	Oct 27	Nov 27	Dec 27
Quantity (MW)	2.4	1.2	1.3	4.2	2.0	3.2	2.4	4.1	2.6	8.5	2.3	2.1
Quantity (MWh)	1785.6	806.4	967.2	3024.0	1488.0	2304.0	1785.6	3050.4	1872.0	6324.0	1656.0	1562.4
Total \$ (not to exceed)	\$155,347.20	\$65,318.40	\$67,704.00	\$190,512.00	\$92,256.00	\$140,544.00	\$126,777.60	\$207,427.20	\$123,552.00	\$404,736.00	\$107,640.00	\$110,930.40
Price, \$/MWh (not to exceed)	\$87.00	\$81.00	\$70.00	\$63.00	\$62.00	\$61.00	\$71.00	\$68.00	\$66.00	\$64.00	\$65.00	\$71.00
% of Load	4.6%	2.2%	2.5%	8.1%	3.8%	5.3%	3.8%	6.4%	4.5%	15.4%	4.5%	4.1%
Forecasted Hedge % After Transaction	37.3%	39.3%	44.1%	35.0%	35.2%	41.5%	38.5%	38.4%	39.3%	35.0%	37.6%	37.7%

Delivery Period	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)
Term	Jan 28	Feb 28	Mar 28	Apr 28	May 28	Jun 28	Jul 28	Aug 28	Sep 28	Oct 28	Nov 28	Dec 28
Quantity (MW)	0.2	0.0	0.0	0.0	0.0	0.8	0.0	1.6	0.0	3.1	0.0	0.0
Quantity (MWh)	148.8	0.0	0.0	0.0	0.0	576.0	0.0	1190.4	0.0	2306.4	0.0	0.0
Total \$ (not to exceed)	\$13,243.20					\$35,712.00		\$80,947.20		\$152,222.40		
Price, \$/MWh (not to exceed)	\$89.00					\$62.00		\$68.00		\$66.00		
% of Load	0.4%					1.3%		2.4%		5.6%		
Forecasted Hedge % After Transaction	32.8%	37.0%	41.0%	26.8%	30.7%	37.0%	34.1%	33.9%	34.3%	24.9%	33.1%	32.6%

The transaction(s) above will be for Financially-Firm Energy with Physical delivery to the MISO Michigan Hub in the Day Ahead Market at or below the monthly not to exceed limits.

The purchase transactions outlined above account for the identified percentages of Zeeland’s forecasted energy requirements in the applicable forward calendar years. The sum of all purchases represents a maximum commitment of \$6,028,439.20.

Member Authorized Representative:

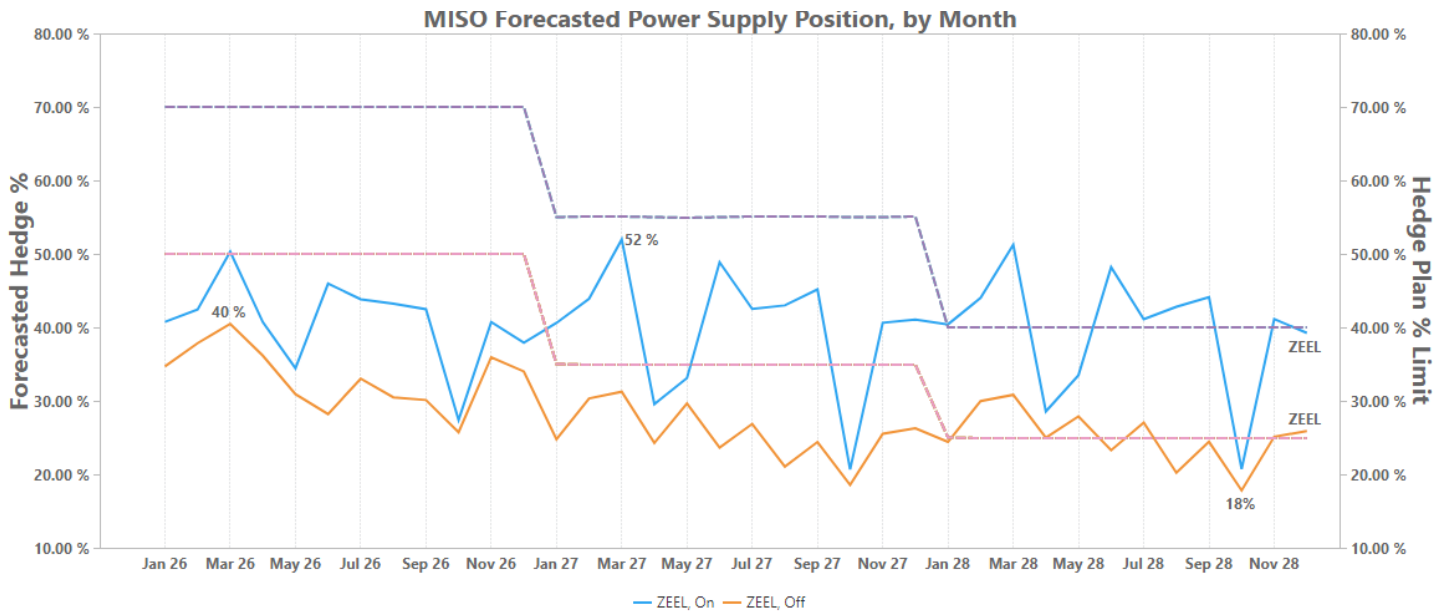
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Date



Forecasted Hedge Plan Position before transaction(s):



TO: Chairperson Boerman and Members of the Board of Public Works  
 FROM: Robert Mulder – Power Supply & Market Operations Manager  
 CC: Andrew Boatright – General Manager  
 SUBJECT: Recommendation: MPPA Short-Term Bilateral Energy Purchases, 2025 - 2028  
 DATE: February 9, 2023

**Background**

The Zeeland Board of Public Works (BPW) participates in the wholesale power market through the Michigan Public Power Agency (MPPA). That participation is guided by a Power Supply Risk Management Policy approved by the BPW Board, and Zeeland City Council. In accordance with these policies, the BPW must have committed energy resources in place to supply specific levels of anticipated BPW energy requirements extending into the future as specified under MPPA’s ‘Stability Plan’ which the BPW has selected.

To ensure compliance with this policy, the BPW, with the support of MPPA, regularly reviews its portfolio and solicits purchase proposals to strategically address open positions in its energy portfolio.

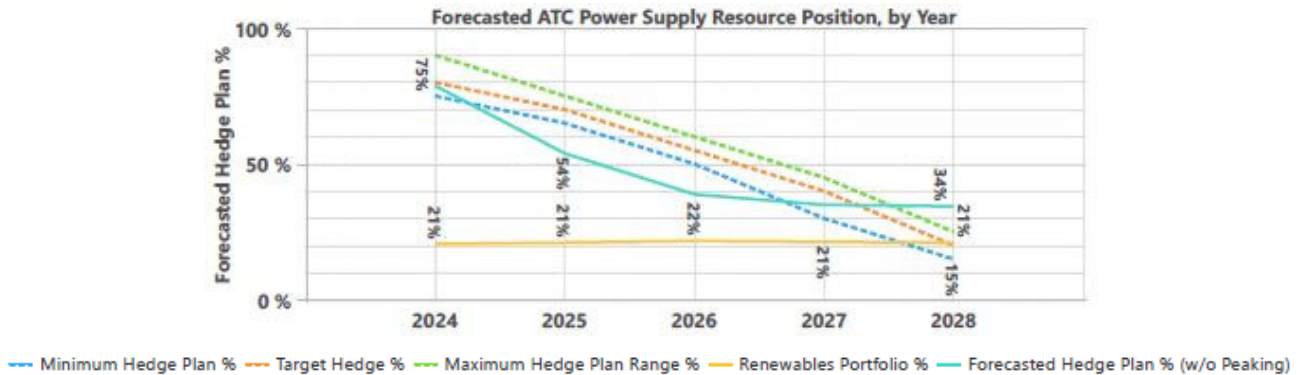
**Description**

In recent weeks, MPPA Power Supply staff has recommended that monthly energy purchase transactions be executed for the period of calendar years 2025 – 2028, to address open positions and mitigate risk by aligning the BPW’s hedged position with its risk management policy. These include a combination of On-Peak (5x16), Off-Peak (5x8, 2x24), and Around-The-Clock (7x24) transactions. The resulting recommendations are provided in the table below:

Calendar Year	Delivery Period	Transaction Details			BPW Hedge Position	
		Total Energy (MWh)	Average Price (\$/MWh)	Total Cost (NTE)	Avg. Monthly % Of Forecasted Load	Avg. Monthly % Hedged After Transaction
<b>2025</b>						
	On-Peak (5x16)	73,520.0	\$60.29	\$4,432,728.00	28.9%	80.0%
	Off-Peak (5x8, 2x24)	56,554.4	\$46.75	\$2,643,713.60	25.6%	80.0%
<b>2026</b>						
	On-Peak (5x16)	74,745.6	\$59.69	\$4,461,358.40	28.9%	70.0%
	Off-Peak (5x8, 2x24)	81,486.4	\$45.13	\$3,677,772.00	36.6%	70.0%
<b>2027</b>						
	ATC (7x24)	103,039.2	\$50.62	\$5,216,090.40	21.1%	54.2%
<b>2028</b>						
	ATC (7x24)	40,240.8	\$49.68	\$1,998,996.00	8.1%	40.8%
<b>Total</b>		<b>429,586.4</b>	<b>\$52.21</b>	<b>\$22,430,658.40</b>		

The total, not-to-exceed cost associated with these recommended volumes and products at the maximum stated strike prices yields a maximum commitment of \$22,430,658.40, which averages \$52.21 / MWh. These transaction(s) will be for Financially Firm Energy with physical delivery to the MISO Michigan Hub in the Day Ahead Market, at or below the monthly not to exceed limits.

The chart below indicates the BPW’s current hedged resource position forecast prior to the recommended transaction.



**Recommendation**

BPW staff recommends that the aforementioned energy purchase commitments be approved, authorizing the General Manager to commit to the purchase of the following short-term energy products totaling a maximum not-to-exceed cost of \$22,430,658.40:

1. Calendar Year 2025:
  - a. On-Peak (5x16) firm energy up to \$4,432,728.00 for 73,520.0 MWh (\$60.29 / MWh avg.)
  - b. Off-Peak (5x8, 2x24) firm energy up to \$2,643,713.60 for 56,554.4 MWh (\$46.75 / MWh avg.)
2. Calendar Year 2026:
  - a. On-Peak (5x16) firm energy up to \$4,461,358.40 for 74,745.6 MWh (\$59.69 / MWh avg.)
  - b. Off-Peak (5x8, 2x24) firm energy up to \$ 3,677,772.00 for 81,486.4 MWh (\$45.13 / MWh avg.)
3. Calendar Year 2027:
  - a. ATC (7x24) firm energy up to \$5,216,090.40 for 103,039.2 MWh (\$50.62 / MWh avg.)
4. Calendar Year 2028:
  - a. ATC (7x24) firm energy up to \$1,998,996.00 for 40,240.8 MWh (\$49.68 / MWh avg.)

The BPW’s Energy Risk Management Policy Statement specifies that transaction terms greater than five years shall be approved by the BPW Board and Zeeland City Council. Accordingly, staff requests Board approval to proceed with this transaction as stated, subject to approval by City Council at their February 20, 2023 meeting.

Attachments:

- MPPA Power Purchase Commitment Authorization (February 8, 2023)
- Resolution: Authorization of Short-Term Energy Purchases (February 20, 2023)





February 8, 2023

**Subject: Power Purchase Commitment Authorization**

The Zeeland Board of Public Works (“Zeeland”), through its Member Authorized Representative, hereby authorizes the purchase of Energy by Michigan Public Power Agency (“MPPA”) on behalf of Zeeland at the following Quantity, Term, Delivery Location and not to exceed price levels. These transactions, if executed by MPPA, are Power Purchase Commitments under the Energy Services Agreement between MPPA and Zeeland.

**Energy:**

Delivery Period	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)
Term	Jan 25	Feb 25	Mar 25	Apr 25	May 25	Jun 25	Jul 25	Aug 25	Sep 25	Oct 25	Nov 25	Dec 25
Quantity (MW)	16.2	16.7	16.2	14.7	20.7	19.3	19.1	20.2	17.6	20.4	17.4	17.6
Quantity (MWh)	5702.4	5344.0	5443.2	5174.4	6955.2	6484.8	6723.2	6787.2	5913.6	7507.2	5289.6	6195.2
Total \$ (not to exceed)	\$456,192.00	\$400,800.00	\$293,932.80	\$258,720.00	\$354,715.20	\$363,148.80	\$477,347.20	\$454,742.40	\$313,420.80	\$382,867.20	\$280,348.80	\$396,492.80
Price, \$/MWh (not to exceed)	\$80.00	\$75.00	\$54.00	\$50.00	\$51.00	\$56.00	\$71.00	\$67.00	\$53.00	\$51.00	\$53.00	\$64.00
% of Load	27.4%	27.7%	27.5%	25.8%	34.3%	28.6%	26.8%	27.6%	27.1%	33.5%	29.4%	30.8%
Forecasted Hedge % After Transaction	79.9%	80.0%	80.0%	80.1%	80.1%	80.0%	80.0%	80.0%	80.1%	80.0%	80.0%	80.1%

Delivery Period	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)
Term	Jan 25	Feb 25	Mar 25	Apr 25	May 25	Jun 25	Jul 25	Aug 25	Sep 25	Oct 25	Nov 25	Dec 25
Quantity (MW)	8.8	8.6	10.5	11.3	15.1	17.8	13.4	15.6	12.5	14.4	7.6	9.3
Quantity (MWh)	3449.6	3027.2	4284.0	4158.4	6160.8	6835.2	5252.8	6364.8	4800.0	5414.4	3161.6	3645.6
Total \$ (not to exceed)	\$238,022.40	\$196,768.00	\$188,496.00	\$170,494.40	\$252,592.80	\$280,243.20	\$257,387.20	\$292,780.80	\$187,200.00	\$232,819.20	\$139,110.40	\$207,799.20
Price, \$/MWh (not to exceed)	\$69.00	\$65.00	\$44.00	\$41.00	\$41.00	\$41.00	\$49.00	\$46.00	\$39.00	\$43.00	\$44.00	\$57.00
% of Load	19.9%	18.8%	23.6%	25.7%	33.7%	35.2%	25.4%	29.0%	26.1%	31.1%	17.7%	21.4%
Forecasted Hedge % After Transaction	79.9%	80.0%	79.9%	80.0%	79.9%	79.9%	80.0%	80.0%	80.0%	80.0%	80.1%	80.2%

Delivery Period	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)	ONPK (5x16)
Term	Jan 26	Feb 26	Mar 26	Apr 26	May 26	Jun 26	Jul 26	Aug 26	Sep 26	Oct 26	Nov 26	Dec 26
Quantity (MW)	17.3	16.4	10.8	16.4	21.8	15.3	19.0	20.7	17.8	27.5	17.7	18.4
Quantity (MWh)	5812.8	5248.0	3801.6	5772.8	6976.0	5385.6	6992.0	6955.2	5980.8	9680.0	5664.0	6476.8
Total \$ (not to exceed)	\$453,398.40	\$388,352.00	\$216,691.20	\$311,731.20	\$376,704.00	\$290,822.40	\$468,464.00	\$438,177.60	\$328,944.00	\$513,040.00	\$305,856.00	\$369,177.60
Price, \$/MWh (not to exceed)	\$78.00	\$74.00	\$57.00	\$54.00	\$54.00	\$54.00	\$67.00	\$63.00	\$55.00	\$53.00	\$54.00	\$57.00
% of Load	28.5%	26.8%	18.3%	28.4%	35.1%	22.6%	26.6%	27.8%	27.0%	44.1%	29.8%	31.7%
Forecasted Hedge % After Transaction	70.0%	70.1%	70.1%	70.1%	69.9%	70.0%	70.0%	70.0%	70.0%	70.0%	70.1%	70.1%

Delivery Period	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)	OFFPK (5x8, 2x24)
Term	Jan 26	Feb 26	Mar 26	Apr 26	May 26	Jun 26	Jul 26	Aug 26	Sep 26	Oct 26	Nov 26	Dec 26
Quantity (MW)	15.4	14.8	12.8	14.6	17.5	20.7	20.2	22.0	19.1	21.5	14.9	16.0
Quantity (MWh)	6283.2	5209.6	5017.6	5372.8	7420.0	7617.6	7595.2	8976.0	7334.4	8428.0	5960.0	6272.0
Total \$ (not to exceed)	\$408,408.00	\$317,785.60	\$235,827.20	\$231,030.40	\$296,800.00	\$304,704.00	\$334,188.80	\$359,040.00	\$293,376.00	\$345,548.00	\$256,280.00	\$294,784.00
Price, \$/MWh (not to exceed)	\$65.00	\$61.00	\$47.00	\$43.00	\$40.00	\$40.00	\$44.00	\$40.00	\$40.00	\$41.00	\$43.00	\$47.00
% of Load	34.4%	31.9%	28.3%	32.8%	38.6%	40.2%	37.6%	40.3%	39.3%	45.6%	34.2%	36.2%
Forecasted Hedge % After Transaction	70.0%	70.0%	69.9%	70.1%	70.1%	70.0%	70.0%	70.1%	70.1%	70.0%	69.9%	70.0%

Delivery Period	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)
Term	Jan 27	Feb 27	Mar 27	Apr 27	May 27	Jun 27	Jul 27	Aug 27	Sep 27	Oct 27	Nov 27	Dec 27
Quantity (MW)	10.9	8.9	5.7	13.9	12.5	9.4	12.6	14.5	10.5	20.5	11.0	10.4
Quantity (MWh)	8109.6	5980.8	4240.8	10008.0	9300.0	6768.0	9374.4	10788.0	7560.0	15252.0	7920.0	7737.6
Total \$ (not to exceed)	\$567,672.00	\$394,732.80	\$216,280.80	\$470,376.00	\$418,500.00	\$311,328.00	\$496,843.20	\$539,400.00	\$347,760.00	\$686,340.00	\$372,240.00	\$394,617.60
Price, \$/MWh (not to exceed)	\$70.00	\$66.00	\$51.00	\$47.00	\$45.00	\$46.00	\$53.00	\$50.00	\$46.00	\$45.00	\$47.00	\$51.00
% of Load	20.7%	16.4%	10.9%	26.9%	23.4%	15.6%	19.9%	22.5%	18.3%	37.2%	21.4%	20.2%
Forecasted Hedge % After Transaction	54.3%	54.0%	53.8%	54.8%	55.2%	53.3%	54.1%	53.7%	53.7%	55.4%	54.1%	54.0%

Delivery Period	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)	ATC (7x24)
Term	Jan 28	Feb 28	Mar 28	Apr 28	May 28	Jun 28	Jul 28	Aug 28	Sep 28	Oct 28	Nov 28	Dec 28
Quantity (MW)	3.4	2.3	1.9	6.4	4.6	4.0	3.7	5.8	3.7	12.3	3.4	3.3
Quantity (MWh)	2529.6	1600.8	1413.6	4608.0	3422.4	2880.0	2752.8	4315.2	2664.0	9151.2	2448.0	2455.2
Total \$ (not to exceed)	\$174,542.40	\$105,652.80	\$72,093.60	\$216,576.00	\$157,430.40	\$132,480.00	\$143,145.60	\$215,760.00	\$122,544.00	\$420,955.20	\$115,056.00	\$122,760.00
Price, \$/MWh (not to exceed)	\$69.00	\$66.00	\$51.00	\$47.00	\$46.00	\$46.00	\$52.00	\$50.00	\$46.00	\$46.00	\$47.00	\$50.00
% of Load	6.4%	4.3%	3.6%	12.2%	8.5%	6.6%	5.8%	8.9%	6.3%	22.0%	6.5%	6.3%
Forecasted Hedge % After Transaction	39.7%	41.8%	45.9%	40.0%	39.7%	43.8%	39.4%	39.6%	41.2%	39.9%	39.3%	39.0%

The transaction(s) above will be for Financially-Firm Energy with Physical delivery to the MISO Michigan Hub in the Day Ahead Market at or below the monthly not to exceed limits.

The purchase transactions outlined above account for the identified percentages of Zeeland’s forecasted energy requirements in the applicable forward calendar years. The sum of all purchases represents a maximum commitment of \$22,430,658.40.

Member Authorized Representative:

\_\_\_\_\_  
Printed

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



Hedge Plan Position before transaction(s):

