

**OPEN SESSION MINUTES
WINNEBAGO COUNTY BOARD OF SUPERVISORS
SOLID WASTE MANAGEMENT BOARD**

DATE: September 20, 2023

TIME: 9:00 a.m.

LOCATION: Solid Waste Administration Office
100 W. County Road Y
Oshkosh, WI

PRESENT: Pat O'Brien, Chairman
Doug Nelson, Vice Chairman
Jim Wise, Secretary
Mike Easker
Paul Eisen
Jerry Konrad
Kevin Konrad
Howard Miller
Shanah Zastera

ALSO PRESENT: John Rabe, Director of Solid Waste
Cassie Stadtmueller, Office Supervisor
Chris Anderson, Foth Infrastructure & Environment
Brett Arnold, Vespene Energy (9:00 a.m. – 10:15 a.m.)

ALSO PRESENT
BY ZOOM: Adam Wright, Vespene Energy (9:00 a.m. – 10:15 a.m.)
Aaron Lavee, Vespene Energy (9:20 a.m. – 10:15 a.m.)

1. Call to Order: P. O'Brien called the meeting to order at 9:00 a.m.
2. Approve Agenda: Motion to approve the September 20, 2023 agenda, made by K. Konrad and seconded by J. Wise. Motion carried 9-0.
3. Public Comments on Agenda Items: None.
4. Communications Shared by Solid Waste Management Board Members: None.
5. Approval of Minutes – August 16, 2023, Open and Closed Session: Motion to approve the August 16, 2023 Open and Closed Session, made by J. Konrad and seconded by K. Konrad. Motion carried 9-0.

6. Discussion – Vespene Energy Proposal for Beneficial Use of Landfill Gas: J. Rabe introduced B. Arnold from Vespene Energy (Vespene) and C. Anderson from Foth Infrastructure & Environment (Foth) to the Solid Waste Management Board (SWMB). J. Rabe explained to the SWMB that SWMB Staff and Foth have been looking into other options for beneficial use of our landfill gas. J. Rabe further explained that we are currently selling power to WPS but the rates can fluctuate month to month. B. Arnold and C. Anderson are here to present a unique beneficial use of landfill gas option to the SWMB as follows.

B. Arnold presented the Vespene Proposal for Beneficial Use of Landfill Gas to the SWMB as follows:

- Vespene Solution:
 - Small, low gas flow, remote sites with no traditional options
 - Closed sites with current electrical project and an expiring Power Purchase Agreement (PPA)
 - Struggling to breakeven on rate offered by utility
 - Already high investment in landfill gas to energy assets
 - Continue beneficial use for landfill gas (LFG) vs. flaring
- Opportunities at Landfills
 - New Source Performance Standard (NSPS)-Regulated Sites
 - Non NSPS-Regulated Sites
 - Closed sites
 - Sites too small & decentralized to be valid targets for renewable natural gas (RNG) development
- Self-Sustaining Microgrid
 - Turbine or engine-based LFG energy project co-located with a modular datacenter. In this way, we bring the user of the energy to the site, rather than exporting the energy to the user.
 - The only export from the site is data, not electrons or molecules, and data can be transferred via satellite or other wireless internet option.
- Enabling On-site Use
 - Balance site loads with fully interruptible datacenters which enable reliable off-grid energy for leachate management, electric vehicle charging, facility power, and other variable site loads
 - This ensures that 100% of the electricity is always put to beneficial use and monetized, allowing the generation assets to run continuously.
- Bridge to e-RINs
 - EPA has accepted a pathway for landfill gas to electricity projects to participate in Renewable Fuel Standards (RFS) program, set to commence in 2024 with e-RINs
 - Potentially lucrative however interconnect times are very location-specific. Vespene generates economic returns while interconnections are in process.

M. Easker asked what process Vespene uses to identify potential sites. B. Arnold explained that they use the public EPA landfill methane outreach database to identify landfill sites that produce greater than 100 scfm.

B. Arnold described the Marathon County Landfill datacenter project (2 MW) and discussed potential datacenter locations at the Snell Road Landfill site.

C. Anderson presented the Vespene Proposal for Beneficial Use of Landfill Gas to the SWMB as follows:

- Existing Conditions
 - Engines 2R, 3, and 4
 - Assume 10 Million kWh/year
 - Need new compressor/treatment system now
 - Currently oversized and at end of life
 - Will need a new engine-generator within the next 2-years (Engine 3 is at end of life)
 - Electricity sent to WPS grid
 - Environmental attributes of Landfill Gas to Energy (LFGTE) currently not being utilized
- WPS PPA
 - Month to month variable rates (on/off peak)
 - Currently average ~\$0.065/kWh
 - No REC revenue
 - Currently (2) grid connections
 - Snell Road Landfill and Sheriff's Office/Law Enforcement Center
 - SWMB investment in LFGTE
 - SWMB investment in replacement Engine 3R
 - No long-term contract creates high risk that revenues may be less than expenses
- Vespene Proposal
 - 10-year agreement
 - Base PPA = \$0.055/kWh + 15% royalties
 - REC/e-RIN management and revenue sharing
 - On-site microgrid with no connection to WPS needed
 - \$1.5 million to support LFGTE system equipment upgrades
 - Vespene to invest in replacement Engine 3R
 - Risk that Vespene will not succeed and WPS grid connection is no longer available
- LFGTE Expenses
 - Capital Investments
 - New LFG Treatment System - \$1,000,000
 - New LFG Blower/Flare System - \$400,000
 - Future Replacement Engine 3R - \$1,000,000
 - Relocation of Engine 4 - \$150,000
 - Operation & Maintenance Costs
 - (Labor, parts, repairs, oil, etc.) - \$500,000/yr
 - Depreciation
 - Variable year to year
- 5-Year Financial Analysis
 - Annual Revenues
 - WPS \$0.065/kWh
 - Vespene \$0.055/kWh + 15% Royalties

- Annual Expenses
 - Capital \$2.5 Million / (5 yrs * 10 Million kWh) = \$0.05/kWh
 - Operation & Maintenance \$500,000 / 10 Million kWh = \$0.05/kWh
- Comparison
 - WPS \$0.065 - \$0.05 - \$0.05 = (\$0.035)/kWh
 - Vespene \$0.055 - \$0.00 - \$0.05 = \$0.005/kWh + 15% Royalties
- Considerations
 - Vespene is investing in the LFGTE system and has interest in its success
 - SWMB continues to operate and maintain LFG engines and equipment contributing to local economy
 - Vespene operates and maintains data center and related equipment
 - Vespene manages and shares current and future Environmental Attributes
 - WPS may not allow reconnection to the grid after disconnect
 - WPS power sales market may improve in the future
- Potential Risks/Contingencies
 - Vespene fails and walks away from the project
 - SWMB retains the LFGTE equipment as part of agreement
 - Grid connection may no longer be available from WPS
 - LFG generation drops below useful flows in less than 10-years
 - SWMB to structure capital investment reimbursement for LFGTE equipment over timeframe <10-years
 - Vespene could eventually move datacenter to a different location
 - LFG Engines performance or catastrophic failure
 - Evaluate reinvestment in repair or new engines at that time
- Recommendations
 - Continue selling power to WPS
 - Negotiate a agreement with Vespene
 - Request Vespene prepare layout and installation plans for equipment
 - Request a schedule from Vespene for installation and switch over to the microgrid
 - Continue to monitor Environmental Attributes applicability

K. Konrad asked what the 15% royalties are based on. A. Wright explained that this would be a variable revenue based on the performance of the datacenter and if/when environmental attributes are available.

K. Konrad asked if Vespene would renegotiate the base PPA rate if market goes up. A. Wright explained that if the grid is paying more it would create more revenue for the overall project so changes to the base rate could be discussed.

K. Konrad asked who owns the datacenter equipment and the data being stored. A. Wright explained Vespene owns the equipment and is fully insured and responsible for maintenance or repairs.

K. Konrad asked how many sites in the United States Vespene has and how long has the project at Marathon County been going. A. Wright explained that there are three sites in California under construction and approximately 20-25 sites in contract negotiation or preliminary

discussion. A. Wright explained they are focusing on the Midwest Region for possible sites and the Marathon County site has been operational since June 2023.

Discussion ensued amongst the SWMB.

D. Nelson asked if the datacenter is similar to a battery and the energy is used to charge it. A. Wright explained that it is not a battery, but the energy produced runs the computers (bitcoin mining).

M. Easker asked if there is data stored on the computers. B. Arnold explained that there isn't data saved on the computers - the data is transmitted via a satellite internet connection to the cloud for storage.

P. O'Brien asked if we would be able to form a cooperative agreement with Vespene and WPS. A. Wright explained that this would be an agreement with just Vespene but there is possibility to have some type of agreement to have a minimum amount of electricity go to Vespene and any excess would go to WPS to maintain that relationship. A. Wright further explained that if the datacenter plans were to fail, WPS is legally obligated to purchase the energy produced from the site.

Discussion ensued amongst the SWMB.

M. Easker asked what site this project would be specific to, and whether the site actually has 10 years left of producing useful LFG flows. C. Anderson explained that according to the landfill gas utilization analysis, the Sunnyview Landfill has approximately 7-10 more years of gas production that can be beneficially used in our engine/generators (~300 cfm). All Snell Road Landfill gas is flared.

M. Easker asked how long this company has been in business. A. Wright explained that they have been in business for approximately 3 years. A. Wright further explained that Vespene is a tech company and biogas developer and is backed by the Silicon Valley Venture Capital.

Discussion ensued amongst the SWMB.

H. Miller would like to see a more detailed financial analysis performed comparing the Vespene and WPS options.

P. Eisen asked if Vespene has any Waste Management landfill sites under contract. A. Wright explained that they are currently in conversation with Waste Management on multiple projects.

Consensus of SWMB is to gather more specific information on rates and financial affect this would have and discuss at a future meeting.

7. Discussion/Action – Landfill Gas System Equipment Proposals (SW02-23 & SW03-23): C.
Anderson presented the Landfill Gas System Equipment Proposals (SW02-23 & SW03-23) to the SWMB as follows:

- Background
 - RFP# SW02-23 LFG Extraction Blower/Flare System
 - RFP# SW03-23 LFG Compression Blower/Treatment System
 - Three vendors responded to each RFP
 - Parnel Biogas (Parnel)
 - Unison Solutions (Unison)
 - Perennial Energy (Perennial)
- Proposals
 - Parnel
 - Qualified / Missing Insurance Certificate
 - No details provided on the equipment skids or schedules
 - Listed deviation to use positive displacement (PD) style compressors instead of specified centrifugal blowers
 - This is not an acceptable deviation as they require compressor oil
 - Referenced other adders/deducts but none were included
 - Foth experience with Parnel skids has been medicore
 - Parnel is the lowest price proposal for both SW02 and SW03
 - Not recommending Parnel at this time due to unresponsive proposal
 - Unison
 - Qualified
 - Schedule – 40 weeks
 - Equipment skids match specifications with minor acceptable deviations
 - Deduct noted for removal of extraction blower recirculation line
 - Air to Gas heat exchanger is added in interstage for system performance
 - Foth experience with Unison skids has been excellent
 - Unison is the highest price proposal for both SW02 and SW03
 - Perennial
 - Qualified
 - Schedule – Submittals 4-8 weeks; Delivery 28-38 weeks
 - Equipment skids match specifications with minor acceptable deviations
 - Glycol Chiller features on treatment skid
 - No recirculation line on extraction blower skid
 - Interstage pressure of 1.4 psig
 - Good experience with Perennial (Snell Road Blower/Flare System)
 - Perennial is the median price proposal for both SW02 and SW03

- Price Comparisons:



RFP TALLY SHEET

RFP TITLE: LANDFILL GAS EXTRACTION BLOWER & FLARE

RFP #: SW02-23 DUE DATE: 9/1/2023

WINNEBAGO COUNTY

VENDOR	LUMP SUM	ITEM 1	ITEM 2	ITEM 3	ITEM 4	DEVIATIONS
PERENNIAL ENERGY LLC	\$393,677.00	\$225,115.00	\$79,325.00	\$78,437.00	\$10,800.00	SEE PROPOSAL
UNISON SOLUTIONS INC	\$782,055.00*	\$472,148.00	\$222,231.00	\$71,476.00	\$16,200.00	SEE PROPOSAL
PARNEL BIOGAS INC	\$309,982.44	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	SEE PROPOSAL

*COMBINED CONTROL PANELS FOR RFP'S SW02-23 & SW03-23 DEDUCT \$30,000.00



REF TALLY SHEET

RFP TITLE: LANDFILL GAS COMPRESSION BLOWER & TREATMENT

RFP #: SW03-23 DUE DATE: 9/1/2023

WINNEBAGO COUNTY

	PARNEL BIOGAS	PERENNIAL ENERGY	UNISON SOLUTIONS
LUMP SUM ITEMS 1-4	\$643,107.87	\$717,148.00	\$851,063.00*
ITEM 1	\$279,103.59	\$315,504.00	\$665,020.00
ITEM 2	\$259,240.00	\$285,787.00	\$97,106.00
ITEM 3	\$104,764.28	\$101,457.00	\$72,737.00
ITEM 4	INCLUDED	\$14,400.00	\$16,200.00
ITEM 5	N/A	\$33,110.000	N/A
SEE PROPOSALS FOR DEVIATIONS			

*COMBINED CONTROL PANELS FOR RFP'S SW02-23 & SW03-23 DEDUCT \$30,000.00

	Parnel	Perennial	Unison
SW-02 Extraction/Flare	\$309,982	\$393,677	\$744,055*
SW-03 Compression/Treatment	\$643,108	\$717,148	\$851,063
TOTAL	\$953,090	\$1,110,825	\$1,595,118

*Unison deducts of \$30,000 (control panel) and \$8,000 (recirc. Line) used in total

- Recommendation
 - Award SW-02 and SW-03 contracts to Perennial Energy
 - SW02-23 for \$393,677 and SW03-23 for \$717,148
 - Assumes continued LFGTE operation
 - Equipment must be replaced to operate (improved reliability)

- Saves significant annual operating costs
 - Partner with Vespene to help fund this investment
 - Continue to maximize landfill gas quality and volume
 - Action required to maintain schedule for long lead time equipment

S. Zastera asked about the issues with Parnel's proposals. J. Rabe explained that we are familiar with Perennial and are happy with their blower/flare equipment at the Snell Road Landfill. J. Rabe further explained that Parnel didn't submit all the required proposal information, but were still given an opportunity to submit the remaining items needed after the fact. J. Rabe further explained that Parnel's proposal were allowed but they only submitted pricing information without details of the equipment skids (like the other proposers).

Discussion ensued amongst the SWMB.

Motion made by M. Easker and seconded by D. Nelson to award SW02-23 and SW03-23 contracts to Perennial Energy for a total of \$1,110,825.

8. Director's Report on Department Operations: J. Rabe presented to the Director's Report on Department Operations as follows:

- LFGTE continues running either 2 or 3 engines during on-peak generation times (approx. 500-750 cfm); 1 or 2 engines during off-peak hours (400-550 cfm); periodic flare operation continues when necessary
- WPS Revenue Summary: \$65,088 in July 2023 and \$39,825 in August 2023; YTD 2023 total = \$492,896 (\$400,000 was 2023 Budget Target)
- 2023 Landfill Gas and Leachate System repairs at Sunnyview Landfill Co-Disposal Site were completed from August 14, 2023 through August 21, 2023; Landfill Drilling & Piping performed time & materials geomembrane boot repairs at CO-2L and CO-3L, and the repair of a 4" leachate conveyance pipe blockage/issue on east slope along with landscaping at all disturbed locations; final cost was \$20,186
- BOW's EPA solid waste infrastructure for recycling grant submittal for recycling system equipment upgrades was not selected as a grant recipient; BOW is planning to schedule a debrief meeting with EPA to better understand grant application shortfalls
- GFL is constructing a new single stream recycling material recovery facility adjacent to the Glacier Ridge Landfill in Horicon, WI (start-up date unknown); extra measures in tracking tonnages from our RUGs will be required
- Previous discussion about weed treatment in the Ken Robl Conservation Park pond
 - Reached out to a vendor that contacted Parks Director Adam Breest.
 - Quote of \$1,800 to complete the pond weed treatment
 - Will work with Parks Department to have treatment complete and the invoice will be covered by the

Discussion ensued amongst the SWMB.

9. Future Agenda Items: M. Easker would like a presentation on the Ken Robl Conservation Park (usage and maintenance) and J. Wise would like a presentation on the possibility of a Solar Farm at the Landfills.
10. Set Next Meeting Date: The next SWMB meeting date is scheduled for October 4, 2023 at 9:00 a.m.
11. Adjournment: Motion to adjourn made by D. Nelson and seconded by K Konrad. Motion carried 9-0. Meeting was adjourned at 11:07 a.m.

Respectfully Submitted,

Cassie Stadtmueller
Office Supervisor

Approved by SWMB – October 18, 2023