Environmental Management System

ENVIRONMENTAL MANAGEMENT SYSTEM

Project Financial Assistance Form

Project Title: Solar array and HVAC update

EMS: Harrison County landfill Contact Person: Tyler Hinkel

Email: Tyler.hclc@gmail.com Phone: 712-644-3093

Assistance Request: $24,999 Matching Cash: $39,738 Total Project: $64,737

A. EMS Objective Association

Check the box that best describes your grant proposal.

- [x] One or more tasks/milestones with the action plan of a **new** objective/target.
- [ ] One or more tasks/milestones with the action plan of an **existing** objective/target.
- [ ] Other, please explain: _____

Please either complete the table below or provide the same information in the format of your choice in an attachment.

Objective Description			
Action	**Subject**		**Adoption Date**
Improve	Energy efficiency at the HCLC scale house		10-15-22
Target 1 Description (Add sections or attachments for additional targets as needed.)			
Action	**Subject**	**Qty to**	**Metric**
Decrease	kWh purchased for usage at the scale house	3000	kWh
Target Time Period	**Time Period Type**	**Component Area**	
1/1/23 -6/30/23	Annual	Greenhouse Gas Reduction	

Baseline data, if applicable	**Baseline Time Period**	**Qty for Period**	**Narrative Description** (Optional)
	FY 2022	18936	Jan - June 2022 billing statements

B. Project Proposal (30 points)

1. Concisely summarize the proposed project and its expected outcome.

The Harrison County Landfill seeks funding to install a 19,300 kWh solar array on the scale house roof and an energy-efficient HVAC system. The expected outcome of this project is to reduce our current kWh consumption at the scale house by 90%.

2. List project related items that have been completed such as estimates, audits, feasibility studies, plan adoptions, board approvals, etc. Also, outline tentative tasks or activities for the project proposal.

Task/Activity	**Start Date**	**End Date**	**Associates** (partners, contractors, vendors)
Request bids	9-1-22	9-16-22	Loftus, Guinan, Boyer Valley, Vandemark
Approve Bids	10-12-22	10-12-22	HCLC executive board
Submit Pre-proposal	9-1-22	9-15-22	Tyler, DNR
Submit King Grant application	9-15-22	10-15-22	Tyler, King Foundation
Energy Audit	9-1-22	10-21-22	Dan Nickey & UNI IWRC
Submit DNR grant application	9-15-22	11-1-22	Tyler & DNR
Install Solar array and HVAC	Upon release of funds		
Track kWh	1-1-23	6-30-23	Tyler
Submit infomation for Inflation Reduction Act	1-1-23	1-31-23	Tyler

3. Provide a more detailed narrative of the project proposal and the reasoning for its associated target. In the narrative, identify the need or problem the proposal will address, elaborate on the milestones in the table above and describe strategies for project implementation.

The Harrison County Landfill will install a 19,300-kWh solar array on the south-facing roof of the scale house. In addition to a solar array, the HCLC will install an energy-efficient HVAC system at the scale house. The HVAC system consists of a Daikin 17 seer, 10 HSPF heat pump and a Daikin air handler. In combination, these two elements will operate 35% more efficiently than the current HVAC unit

Our target is to lower our greenhouse gas dependency by 17.2 metric tons as the result of avoiding 24,300 kWh needed from MidAmerican's power grid. The HCLC determined this metric by entering our expected kWh savings into the EPA's greenhouse gas equivalency calculator.

At the project's onset, the HCLC planned to install a geothermal heat pump. After speaking with contractors, it was determined that this would not be a cost-effective solution, as the HCLC scale house sits on a limestone deposit, there are quarries on the north and south of the HCLC fenceline. Local drilling contractors would not give a bid, knowing there was a high probability of being unsuccessful. Given this information, we worked with the contractors bidding on the project and the IWRC to find a suitable alternative that could meet the demands of our energy needs and give us the most significant reduction on our environmental impact. The group consensus for an affordable and efficient solution was an air-to-air heat pump.

The HCLC has coordinated with Dan Nickey from the IWRC throughout the planning of this project. Unfortunately, due to schedules, Dan could not perform an energy audit until October 27th. From the energy audit findings, we have identified that the doors and lighting are additional areas of potential savings at the scale house. Those two items are not included in this project because they were not discovered until 10-27-22. The HCLC will pursue these other areas in the future.

At the regularly scheduled October 12th commission meeting, board members voted to approve moving forward with the lowest bids for the solar array and the HVAC system.

C. Project Impact & Monitoring (40 points)

4. Explain the expected environmental impact of completing the grant project and achieving its associated EMS objective/target. Identify the geographic region in which the environmental impact is expected to be realized, such as a facility fenceline, municipality, service area, etc. Also, describe the methodology to be used for measuring environmental impact.

We expect this project will reduce our kWh consumption from MidAmerican Energy by 90%. The environmental impact will be realized within the HCLC fence line. By lowering our kWh consumption from MidAmerican Energy, we will avoid 24,300 kWh, which equals 17.2 metric tons of CO2 yearly.

We will record our monthly usage from MidAmerican Energy statements to measure the success of this project.

5. Identify who is expected to benefit from the completion of the grant project proposal and/or EMS objective and describe what benefits are projected. Benefits may be environmental, economic, service-related, etc.

The HCLC will see a direct benefit from this project. A 90% reduction in usage will result in a 90% reduction in our utility bill. This translates to an estimate of $2,900 annually.

6. As applicable, explain how the associated EMS objective fits into a long-range plan or has environmental impacts beyond the target end date.

The HCLC's Greenhouse gas reduction project will have a lasting impact on the HCLC's environmental footprint. The life expectancy for the Daikin Heat pump is 10-15 years. After ten years of running our new heat pump, will we reduce our CO2 emissions by 172 tons. The solar panels have a life expectancy of 30 years; they will contribute to over 500 tons of CO2 reduction throughout their life.

D. Project Budget & Economic Sustainability (30 Points)

7. Enter budget information in the table below. A minimum cash match of 25% is required for items in which financial assistance is requested.

Budget Item	Assistance Request $	Local Share – Cash	Total
Daikin Heat Pump and Air Handler installation	$7,377.75	$2,459.25	$9,837.00
Solar Panel installation	$17,621.25	$37,278.75	$54,900.00
TOTALS:	$24,499	$39,738	$64,737

8. Are three quotes or estimates for each budget item attached? Yes ☒ No
If not, provide the reason(s). Note: Project proposals may be rejected for not including three quotes or estimates for budget items.

The HCLC requested bids from 5 local contractors. However, only two contractors submitted proposals for the HVAC and the Solar installation.

9. Provide a detailed budget narrative related to this project and specify how grant funds will be used.

The HCLC will use grant funds to purchase and install solar panels and a Daikin HVAC system. Service and maintenance on the solar panels and HVAC system will be sustained through the HCLC operating budget.

10. Identify how the project will be financially sustained once project funds are expended. Include an explanation for the continuance of such items as labor, equipment maintenance, service contracts, etc.

Equipment maintenance, repair, and any service contracts will be budgeted for through the HCLC operating budget. We currently have a service contract on our existing HVAC system, so we do not expect to see any substantial increase in this area of our budget.

11. Describe any expected economic benefits, resulting from the completion of the associated EMS objective, such as cost avoidance or revenue generation. As applicable, estimate the payback period for the project cost and explain how it was calculated.

The HCLC will benefit from this project by reducing our utility bill. The solar portion of this project will be eligible for a 30% savings through the Inflation Reduction act. If we are awarded funding through the Iowa DNR, the payback period would be 7.9 years for the complete project. The HCLC has also pursued other local funding sources for this project in the amount of $17,018. If awarded this additional funding, the payback period on the capital expense that the HCLC is responsible for would be 2.3 years.

12. As applicable, describe how economic benefits, either immediate or after a payback period, will in turn, benefit members of your service area.

The HCLC views any opportunity to lower operating expenses as beneficial to our planning area. Lower operating expenses reflect in lower rates for our customers.

Please Note: Unallowable costs for financial assistance or local cost-share include, but are not limited to:

1. Taxes, legal costs, or contingency funds.
2. Passenger vehicles, vehicle registrations, or vehicle/equipment leases.
3. Proposal preparation or contractual project administration.
4. Land acquisition or real estate leases.
5. Office furniture, office equipment, or software.
6. Costs for which payment has been or will be received under another federal, state, or private financial assistance program.
7. Costs incurred before a written agreement between the applicant and the department has been executed.

E. Signature

I affirm the information provided on this Application is true, and that I will provide all other information requested for further substantiation. I agree that if awarded financial assistance for a project(s), I will execute the contract the DNR provides for conveying those funds, which contract will include but not be limited to conditions for expending those funds, and for making reasonable accounting of those expenditures and matching funds or in-kind expenses.

In order to determine funding eligibility, the Department reserves the right to verify any information presented in the application and to determine the applicant's compliance status with applicable Local, State and Federal statutes and regulations. If an applicant is selected to receive financial assistance, an offer of financial assistance may be rescinded if the applicant is determined to be out of compliance with applicable Local, State and Federal regulations.

Operations Manage — 10-28-22

Signature, Title **Date**

F. Forms

Include signed copies of required forms with your application. Forms may be found on the EMS website:

Minority Impact Statement

Pursuant to 2008 Iowa Acts, HF 2393, Iowa Code Section 8.11, all grant applications submitted to the State of Iowa which are due beginning January 1, 2009 shall include a Minority Impact Statement. This is the state's mechanism to require grant applicants to consider the potential impact of the grant project's proposed programs or policies on minority groups.

Please choose the statement(s) that pertains to this grant application. Complete all the information requested for the chosen statement(s).

☐ The proposed grant project programs or policies could have a disproportionate or unique **positive** impact on minority persons.

Describe the positive impact expected from this project

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☐ The proposed grant project programs or policies could have a disproportionate or unique **negative** impact on minority persons.

Describe the negative impact expected from this project

Present the rationale for the existence of the proposed program or policy.

Provide evidence of consultation of representatives of the minority groups impacted.

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☒ The proposed grant project programs or policies are **not expected to have** a disproportionate or unique impact on minority persons.

Present the rationale for determining no impact.

I hereby certify that the information on this form is complete and accurate, to the best of my knowledge:
Name: Lyle Hinkel
Title: Operations Manager

420 East 7th Street
Logan, IA 51546
(712)644-3260
jon@loftusheatingandac.com
September 16, 2022

Harrison County Landfill Commission
121 Hwy 30 East
PO Box 121
Logan, Iowa 51546
712-644-2348

Install an Air Handler and Heat Pump System

Install a Daikin air handler and heat pump system designed for solar

17 SEER enhanced Fit style unit will sit on a bracket and bad

Inverter-driven compressor

Louvered styled cabinet

Evaporator is a cased coil

Anitimicrobial additive to drain coil to resist mold

Variable speed blower motor

New copper line set

Nitrogen purging while brazing and for leak checking

Digital thermostat with indoor air quality settings and WIFI capable

Install metal for the plenum off the discharge of the air handler

AHRI # 207173039

Daikin Air Handler model number DV42FECC14

Daikin Heat Pump model number DZ17VSA421BA

Daikin +1 Wi-Fi Thermostat

Price for heating and cooling system is.....$9837.00

Terms: Partial payment will be needed to secure pricing of equipment and material as rates are fluctuating . Pricing is subject to change after 15 days. A service charge of 1.5% (APR 18%) will be made on past due accounts.

Warranty: One year workmanship. 5 year parts warranty if registered. This warranty does not include general maintenance. Work performed outside of normal business hours may be subject to a service charge.

Customer Approval_____**Date** _____

GUINAN HEATING AND COOLING

123 Lincoln Hwy.
Missouri Valley, Iowa 51555

Bid

Date	Estimate #
9/14/2022	*3376*

Name / Address
Harrison County Landfill Comm ***121 Highway 30*** ***P.O. Box 121*** ***Logan, Iowa 51546***

Project

Item	Description	Qty	Rate	Total
	Bid to install High efficient heat pump at scale house ***Bid to consist of:*** ***1-Tempstar Variable speed heat pump, 3 ton, 17.5 SEER, 10 HSPF, 3 ton M/N-TVH836*** ***1-Power surge protector # ICM493*** ***1-Tempstar communicating, Variable speed air handler M/N-FCM4X4800*** ***1-Tempstar communicating thermostat*** ***1-Tempstar 20 KW electric heat kit M/N-EHK20*** ***1-outdoor base pad with 6" riser for defrost*** ***1-supply air duct transition*** ***1-return air duce connection***			

	Subtotal
	Sales Tax (0.0%)
	Total

Phone #
7126424466

GUINAN HEATING AND COOLING

123 Lincoln Hwy.
Missouri Valley, Iowa 51555

Bid

Date	Estimate #
9/14/2022	*3376*

Name / Address
Harrison County Landfill Comm ***121 Highway 30*** ***P.O. Box 121*** ***Logan, Iowa 51546***

Project

Item	Description	Qty	Rate	Total
Installation	***1-new refrigerant lines (NEW)*** ***2-electrical connections*** ***1-PVC drain line piping*** ***Material & Labor***		*11,000.00*	*11,000.00T*

Subtotal	*$11,000.00*
Sales Tax (0.0%)	*$0.00*
Total	*$11,000.00*

Phone #
7126424466

5425 Lower Beaver Rd
Des Moines, IA 50310

Cory Novak
Solar Energy Consultant
Office: 515-331-4200
Call or text: 515-528-1508

Brian Klein
2812 US-30
Logan, IA 51546

95% Annual Usage Offset

Estimate Date**	9/14/2022	System Size	19.8 kW
Solar PV Estimate**	$61,200	Cost Per Watt	$3.09
Fed Tax Credit 30%	(18,360)	Solar Panels	44
IA Tax Credit 0%	-		
Depreciation***	-	Annual kWh Usage	26,200
Grant****	-		
Total Incentives	(18,360)	Annual kWh Produced*	24,956
Net Investment	**$42,840**	Utility Rate per kWh	$0.1050
Year 1 Production*	$2,620	Solar cost per kWh	**$0.0622**
R.O.I. In	**Year 14**	Solar Power Produced*	**$122,847**

* Estimated based on historical climate data, current energy rates, and anticipated rate increases for the warranty period

** Estimate expires 30 days from the issuing date and is a cash estimate unless otherwise stated

*** Total Federal and Iowa Tax Rate of 30.53%

**** USDA REAP Grant for qualifying rural businesses, not guaranteed, 25% of total costs, less any fees

J.P. Electric, Ltd
2246 Yellowsmoke Road
Denison, Iowa 51442

Estimate

Date	Estimate #
9/20/2022	958

Name / Address
Harrison County Landfill 2812 Hwy 30 Logan, Iowa 51546

Project

Description	Qty	Cost	Total
Materials and Labor to install Solar Array on Scale House roof. Note: Project would need to be submitted to Mid American Energy for approval prior to moving forward. This cost is $115.00 to them and $150.00 to J.P. Electric. This cost would be paid to J.P. regardless is project is approved. Solar Array on Scale House Roof 1. This includes all panels, inverters, rails and hardware. 2. This includes interconnection with existing electrical feed. 3. This includes State of Iowa inspection and permits 4. This includes a 19,300 kW system		54,900.00	54,900.00

Subtotal	$54,900.00
Sales Tax (7.0%)	$0.00
Total	$54,900.00