Environment and Natural Resources Trust Fund

2024 Request for Proposal

General Information

Proposal ID: 2024-031

Proposal Title: Next-Gen Refrigeration & Technician Training: A Climate Solution

Project Manager Information

Name: Jennifer Theodore

Organization: Minnesota Pollution Control Agency

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Project Basic Information

Project Summary: Preparing Minnesota to meet the call of a national commitment to reduce emissions of high global warming potential refrigerants through training, workforce development, technical and financial assistance.

Funds Requested: $511,000

Proposed Project Completion: June 30, 2027

LCCMR Funding Category: Air Quality, Climate Change, and Renewable Energy (E)

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Hydrofluorocarbons (HFCs) are commonly used as refrigerants and are potent greenhouse gases (GHG) that trap thousand times more heat in the atmosphere than carbon dioxide. In Minnesota, HFCs are the second biggest activity source of GHGs within the commercial sector and are rising.

Federal legislation is driving an industry-wide transition away from HFCs. The U.S. American Innovation in Manufacturing Act phases down HFCs, facilitates the transition to next generation technologies, and aims to reduce end of life emissions- strategies to avoid an increase of 0.5°C of global warming by the end of the century. Consumers will begin to see the effects in refrigerant choices and prices, spurring some owners to consider updating systems sooner.

A trained workforce is key to reducing refrigerant emissions. Refrigeration techs are needed to install and maintain next generation refrigeration systems and fix leaks. In the 7-county metro area, the supply of Heating, Air Conditioning, and Refrigeration Mechanics and Installers is lower than the national average. Major retailers report it's difficult to find techs that are knowledgeable about natural refrigerants

This proposal helps businesses, government, and institutions meet ambitious goals for transitioning to next generation refrigeration technology and reduce refrigerant emissions.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

We propose a 3-year project focusing on smaller organizations (e.g., grocery stores, schools, local government), and will:
- Recruit and train working professionals to increase expertise in commercial refrigeration management, executed by Minneapolis College
- Convene a multi-day training on natural refrigeration systems, for future and current technicians, with access to multiple vendor systems
- Incentivize transitions to next generation refrigeration technologies, to include zero percent interest loans to update systems
- Spur businesses to take advantage of technical assistance to reduce leaks and optimize energy efficiency, e.g., conduct site assessments, increase involvement in EPA Green Chill Program, hold a business-to-business event

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

- We increase the number of refrigeration technicians who have the skills and ability to install and maintain natural commercial refrigeration systems and other technologies that reduce the use of high GWP refrigerants, as well as to service and prevent leaks in traditional HFC systems
- Increase the capacity to provide service in Greater MN so that location does not prevent timely servicing or updates to refrigeration equipment
- Small businesses have knowledge and tools to identify refrigerant leaks quickly

Activities and Milestones

Activity 1: Create refrigerant management course

Activity Budget: $11,800

Activity Description:
With Minneapolis College Office of Continuing Education and Workforce Development, we will:
- Create a customized training curriculum, using components of the Minneapolis College HVAC Department's Refrigerant Management class
- Train business owners and operators on refrigeration management skills with 32-hour course at Minneapolis College, maximum class size is 30-35
- Develop framework for short-term career training program to reduce barriers and increase entry into HVACR technician, mechanic, and installer trade. Future partnerships for funding a pilot class will be pursued outside of LCCMR funding (referenced in long-term implementation).

Activity Milestones:

Description	Approximate Completion Date
Formalize Partnership with Minneapolis College & customize refrigerant management class	August 31, 2025
Recruit refrigerant management class participants	August 31, 2025
Minneapolis College starts refrigeration management courses for business owners and operators	September 30, 2025
Partner Check-Ins	June 30, 2027
Design short-term career pathway program for refrigerant technicians	June 30, 2027

Activity 2: Next-gen natural refrigerant training for current and future technicians

Activity Budget: $21,600

Activity Description:
- Train current and future technicians on natural commercial refrigeration systems, multi-day training with 60-100 attendees
- Contract with North American Sustainable Refrigeration Council to coordinate event, including identifying and scheduling trainers
- Scholarships for approximately 10-18 attendees
- MPCA is to identify event location, most likely MPCA Saint Paul Office

Activity Milestones:

Description	Approximate Completion Date
Preparation for Natural Refrigeration Training	December 31, 2024
Select scholarship recipients	December 31, 2024
Natural Refrigeration Training	March 31, 2025

Activity 3: Financial incentives to switch to low global warming potential refrigerants

Activity Budget: $200,000

Activity Description:
The MPCA will provide approximately $200,000 in grants to businesses, educational institutions, government, or non-profit organizations to upgrade or replace refrigeration systems to use lower GWP-refrigerants. Grantees will provide a

cash match to their project, a minimum 25%-50% match is likely. We may fund around 10 projects.

Refrigeration projects are expensive. For example, the cost for a convenience store to replace a cooler, freezer, and respective condensing units was $69,000. Therefore, the MPCA plans to make available zero percent interest loans to address project expenses and to help businesses make the transition sooner.

Grant funding includes creating a Request For Proposals (RFP), promoting the RFP, reviewing applications through a review team and selecting a recipient(s) based on criteria developed by contracts staff and the MPCA project manager, writing a contract to award funds, and vetting project implementation. All grants will meet the capital expenditure requirements of the appropriation language.

Activity Milestones:

Description	Approximate Completion Date
Develop RFP and Marketing Materials	December 31, 2024
First RFP goes live	January 31, 2025
Second RFP goes live	January 31, 2026
Close first grant round	June 30, 2026
Close 2nd grant round- final reimbursement	June 30, 2027

Activity 4: Technical assistance to small organizations

Activity Budget: $277,600

Activity Description:
- Temporary, unclassified MPCA employee to develop direct technical assistance to small organizations, plan and recruit for refrigerant management class, assist with planning natural refrigeration training, co-create framework for short-term career training program to increase entry into refrigeration technician, mechanic and installer trade, and collaborate on grant development.

- MPCA will hire one consultant to join its existing Retiree Technical Environmental Assistance Program. Consultant will assess retail refrigeration systems for leaks and recommend best management practices to identify leaks early and optimize energy efficiency. Customers could include businesses, educational institutions, government, or non-profit.

- RETAP consultant will conduct about 8 site visits per year over the course of three years.

Activity Milestones:

Description	Approximate Completion Date
Hire Environmental Specialist to plan technical assistance and workforce training	November 30, 2024
Hire consultant to do site assessments	December 31, 2024
Site assessments	May 31, 2027

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Amy Shapiro	Minneapolis Community and Technical College	Customized Training Representative	Yes
Danielle Wright	North American Sustainable Refrigeration Council	Executive Director	Yes

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

MPCA's Retiree Environmental Technical Assistance Program can continue to provide refrigerant assessments after the project ends with MPCA funding.

We plan to approach Minnesota's Department of Employment and Economic Development for funding to advance the short-term career training program developed in Activity One.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Pilot Program to Optimize Local Mechanical and Pond Wastewater-Treatment Plants	M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 04a	$700,000
Reducing Municipal Wastewater Mercury Pollution to Lake Superior	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 04h	$250,000
Optimizing Local Mechanical and Pond Wastewater-Treatment Plants	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 11b	$500,000
Groundwater Contamination Mapping Project - Phase II	M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 03f	$800,000
Developing Strategies To Manage PFAS In Land-Applied Biosolids	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 04d	$1,404,000
Wastewater Pond Optimization Implementation	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 20a2	$700,000
Chloride Pollution Reduction	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 20a4	$500,000
Increasing Diversity in Environmental Careers	M.L. 2022, , Chp. 94, Art. , Sec. 2, Subd. 05h	$500,000
Replacing Failing Septic Systems to Protect Groundwater	M.L. 2022, , Chp. 94, Art. , Sec. 2, Subd. 10h	$2,000,000
Pig's Eye Landfill Task Force	M.L. 2022, , Chp. 94, Art. , Sec. 2, Subd. 10j	$800,000

Project Manager and Organization Qualifications

Project Manager Name: Jennifer Theodore

Job Title: Environmental Specialist 3

Provide description of the project manager's qualifications to manage the proposed project.

Jennifer is an Environmental Specialist 3 in the Business Environmental Assistance Program. She's developed requests

for proposals to reduce refrigerant emissions and other air pollution prevention projects. She's evaluated grant applications and acted as project manager. She facilitated an internship on refrigeration management at the MN Grocers Association and drafted the agency's 5-year strategy for reducing refrigerant emissions.

Most of Jennifer's time is spent helping small businesses understand if environmental rules apply, and how to comply, across media such as air, solid and hazardous waste, industrial wastewater, and stormwater. She's worked with staff across the agency and with local government and trade associations to develop compliance resources.

Organization: Minnesota Pollution Control Agency

Organization Description:
The Minnesota Pollution Control Agency monitors environmental quality, enforces environmental regulations, and offers technical and financial assistance. The MPCA investigates and cleans up contaminated soil, groundwater and other natural resources. Staff develop statewide environmental policy and support environmental education. The MPCA works with many partners- citizens, communities, businesses, all levels of government, environmental groups, and educators- to develop innovative, community-centered approaches that protect our natural resources, improve human health, and foster strong economic growth. We lead Minnesota's efforts to protect against the devastating effects of climate change.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Temporary Unclassified Environmental Specialist 3		Project manager to develop direct technical assistance to small organizations, plan and recruit for refrigerant management class, assist with planning natural refrigeration training, co-create framework for short-term career training program to increase entry into refrigeration technician, mechanic and installer trade, and collaborate on grant development.			34%	3		$275,000
							Sub Total	**$275,000**
Contracts and Services								
Minneapolis College	Sub award	Create a customized training curriculum, using components of Minneapolis College HVAC Department's Refrigerant Management class - Train business owners and operators on refrigerant management through a 32- hour course - Advise on a framework for a short-term career training program to reduce barriers and increase entry into HVACR technician trade				0.06		$11,800
Business, non-profit, educational institution, government	Professional or Technical Service Contract	For small businesses, non-profits, government, and educational institutions to replace refrigerant systems that use high GWP-refrigerants with equipment that uses lower-GWP refrigerants. Grant funds will be competitively awarded; projects with the greatest reductions in carbon dioxide equivalent will be more competitive.				0		$200,000
Retiree Technical Environmental Assistance Program	Professional or Technical Service Contract	Consultant will assess refrigeration systems for leaks and recommend best management practices to identify leaks early and optimize energy efficiency. Estimate 8 site visits a year. Customers could include businesses, educational institutions, government, or non-profit.				0.06		$2,600
North American Sustainable	Sub award	Coordinate multi-day training event on natural refrigeration for refrigeration technician students and working professionals, estimated attendees 60-				0.06		$10,000

Refrigeration Council		100. Responsibilities include scheduling trainers and planning agenda. Includes staff time and travel to event site.						
							Sub Total	**$224,400**
Equipment, Tools, and Supplies								
							Sub Total	**-**
Capital Expenditures								
							Sub Total	**-**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								
	Conference Registration Miles/ Meals/ Lodging	Approximately 10-18 scholarships to attend multi-day natural refrigerant training.	Scholarships cover cost of attendee's time away from work if their employer does not cover the cost. For example, for students. The conference does not have a registration fee and working professionals are paid by employers for the cost of their time.					$11,600
							Sub Total	**$11,600**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								

							Sub Total	**-**
							Grand Total	**$511,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	**-**
Non-State				
Cash	Grantee cash match	Grantees are responsible for a cash match for their grant project. Estimate is based on previous grand round with 25% match; average match was $15,000. We may fund around 10 projects.	Potential	$150,000
In-Kind	North American Sustainable Refrigeration Council	Staff time to coordinate natural refrigeration training. Catering for approximately 60-100 attendees at multi-day conference.	Potential	$15,000
			Non State Sub Total	**$165,000**
			Funds Total	**$165,000**

Attachments

Required Attachments

Visual Component

File: 52618a01-940.pdf

Alternate Text for Visual Component

Alternative refrigerants and refrigerant management have a greater CO2-Eq reduction potential than public transport, electric cars, and recycling, combined. Annual refrigerant leaks at a typical grocery store cause as much global warming as driving 338 cars a year. 40,100 openings for HVACR mechanics and installers are projected between 2021-2031....

Optional Attachments

Support Letter, Photos, Media, Other

Title	File
North American Sustainable Refrigeration Council- Letter of Support	10367101-a38.pdf
Mpls Community and Technical College - Letter of Support	259b96bd-862.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have potential for royalties, copyrights, patents, or sale of products and assets?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Does your project include the design, construction, or renovation of a building, trail, campground, or other capital asset costing $10,000 or more?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services, as defined in Minnesota Statutes section 299C.61 Subd.7?

No