



# Environment and Natural Resources Trust Fund

2025 Request for Proposal

## General Information

**Proposal ID:** 2025-303

**Proposal Title:** Repurposed Railroad Tie Conversion to Biofuel Energy Source

## Project Manager Information

**Name:** Cedric Heller

**Organization:** Hallett Dock 7 - Bio-Fuel Solutions

**Office Telephone:** (218) 590-7684

**Email:** cedric.heller@gmail.com

## Project Basic Information

**Project Summary:** We intend to pulverize used railroad ties and turn them into dense pellets for use in bio-fuel energy systems.

**ENRTF Funds Requested:** \$3,327,000

**Proposed Project Completion:** July 31, 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.**

Each year, roughly 4-5 million railroad ties are removed from service on rail lines in the upper-midwest and stockpiled or disposed of in various ways. Stockpiling creates an opportunity for chemicals present in the rail tie preservatives to seep into the ground, damaging the soil beneath. To avoid stockpiling, the primary avenue for disposal is shredding and incineration in co-fire power generation facilities. The problem resulting from this process is inefficient transportation and, therefore, inefficient use of a potentially robust renewable bio-fuel market. The low density chips don't lend themselves well toward bulk transportation and the energy density per load is low. Attempting to burn lower energy dense loads of material leads to both increased transportation needs and less renewable fuels used in power generation systems.

### **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.**

Our proposed solution is to process the shredded ties into an energy dense, easily transportable pellet product that can be used in any industrial power generation system. Our goal is to create a larger supply of this reused and readily available fuel source to help increase the amount of bio-fuel available to produce power. Consequently, by densifying the energy content available in each railroad tie, we will drastically increase the amount of energy that can be transported per load. This will reduce the overall number of loads required to transport the same amount of fuel source material, resulting in fewer emissions from transportation needs.

Additionally, the pelletizing process will produce a much more consistent material that will allow end users to better predict and control their furnaces. A common issue with bio-mass combustion is inconsistencies in energy density and release of unknown harmful chemicals. The pelletized product will provide a reliable burn to avoid power production drops. The pellets will also provide a complete burn resulting in reduced emissions from plants that already burn shredded materials

### **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?**

Projected outcomes from this process are a cleaner, more efficient bio-energy fuel options. Promoting the use of bio-fuels will reduce our daily emissions as a society and improve all of the benefits known to coincide with fewer pollutants in the air. Promoting a robust bio-fuels market will greatly benefit Minnesota as many industries continue to turn towards renewable energy sources. The options for use of this product are not limited to power plants; there are numerous processes that could benefit from having renewable energy options that may not have been previously available to them

## Activities and Milestones

### Activity 1: Design and installation of equipment

**Activity Budget:** \$2,995,000

**Activity Description:**

This stage of the process would define production rates, engage equipment vendors, purchase the equipment, and perform all engineering design for installation. This stage would include designs for product testing needs

**Activity Milestones:**

Description	Approximate Completion Date
Equipment selected	August 31, 2024
Equipment purchased	December 31, 2024
Equipment installed	May 31, 2025
Equipment commissioned and ready for use	July 31, 2025

### Activity 2: Test the process

**Activity Budget:** \$50,000

**Activity Description:**

The first rounds of material processing will be used to dial in the equipment to produce optimal pellet characteristics. Pellet testing will include burn testing to develop an accurate MSDS

**Activity Milestones:**

Description	Approximate Completion Date
First pellet processing for testing	August 31, 2025
First batch of pellets produced for sale	November 30, 2025

### Activity 3: Operate the system

**Activity Budget:** \$282,000

**Activity Description:**

Maintain an operation producing pellets for use in bio-fuel burning power generation industries

**Activity Milestones:**

Description	Approximate Completion Date
Produce the first 1,000 Tons of pellet material (~10,000 ties)	March 31, 2026

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Jeff Heller	Hallett Dock 7	President	No
Bjorn Ojard	Hallett Dock 7	Vice President - Operations	No

## 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?**

Long-term intentions for this project is that the facility and product will become self-sustaining. We have the raw material sourcing and can increase that sourcing should this project become successful. Sale of the manufactured product would be used to continue operations.

## Project Manager and Organization Qualifications

**Project Manager Name:** Cedric Heller

**Job Title:** Professional Mechanical Engineer

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

I have 7 years of experience designing, engineering, and managing industrial system installations. My experience is split 3 ways between engineering design, design project management, and construction management. As a design project manager, I have led teams in developing complex industrial systems that range from mining process, to plastic recycling systems, to renewable bio-fuel production plants. The experience I have gained working with bio-fuel production systems will be key in my ability to both start-up and maintain an efficient renewable bio-fuel production plant. As a construction project manager, I have proven the ability to project timelines, budgets, and capacity to guide installations according to project design. The bulk of my construction management experience is related to the limestone kilns and the emissions systems surrounding them. Industrial scale baghouses, electrostatic precipitators, scrubbers, and cyclones are some of the many emissions reduction systems I have worked with. My direct experience managing installations of pollutant reduction systems provides me with a solid foundation to perform the duties required to manage this bio-fuel project.

In addition to my own experience, I will be working directly with 2 other professional engineers with decades of experience designing and managing industrial projects. Both of these engineers have held management roles in industrial companies and will be invaluable while assisting me with keeping our project on track. We will operate as a team with the goal in mind to produce a renewable product from a reused resource that is highly energy dense and works to reduce fuel usage in the energy sector.

**Organization:** Hallett Dock 7 - Bio-Fuel Solutions

**Organization Description:**

We specialize in bulk material storage and transloading of industrial commodities. Our main facility at Hallett Dock 7 in Duluth, MN. has been the operating center for many different storage and remediation process installations. Recently, we have supported water filtration operations to clean water the Duluth harbor and remove contaminated sediments from needed shipping lanes. We currently have rail and truck access with a future goal to refurbish the dock wall and accept Great Lakes vessels for added means of transload capabilities.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
2 Design Staff		To perform preliminary equipment design and continued product testing			28%	1		\$75,000
4 Operations staff		Perform daily work to operate process equipment			28%	8		\$250,000
							<b>Sub Total</b>	<b>\$325,000</b>
<b>Contracts and Services</b>								
TBD	Professional or Technical Service Contract	Consulting for environmental emissions and chemical safety testing				0.25		\$50,000
TBD	Professional or Technical Service Contract	Required civil and structural engineering tasks to install process equipment				0.25		\$20,000
							<b>Sub Total</b>	<b>\$70,000</b>
<b>Equipment, Tools, and Supplies</b>								
	Equipment	Primary shredder, secondary shredder, hammermill pulverizer, pelletizer, bagging system	This is the basic equipment required to produce the fuel product we are planning to make					\$2,900,000
	Tools and Supplies	PPE for 8 personnel	Required safety gear for operators working in an industrial site					\$32,000
							<b>Sub Total</b>	<b>\$2,932,000</b>
<b>Capital Expenditures</b>								
							<b>Sub Total</b>	-
<b>Acquisitions and Stewardship</b>								

							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								
							<b>Sub Total</b>	-
<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
							<b>Sub Total</b>	-
<b>Other Expenses</b>								
							<b>Sub Total</b>	-
							<b>Grand Total</b>	<b>\$3,327,000</b>

Classified Staff or Generally Ineligible Expenses

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

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

**Total Project Cost: \$3,327,000**

**This amount accurately reflects total project cost?**

Yes



## Attachments

### Required Attachments

#### *Visual Component*

File: [b652a6b8-8d1.pdf](#)

#### *Alternate Text for Visual Component*

This is an aerial view of the location where the project will take place. Hallett Dock 7 in Duluth, MN is outlined in red to indicate its location...

#### *Financial Capacity*

Title	File
Financial Capacity Note	<a href="#">fb9be416-1c5.pdf</a>

### Supplemental Attachments

#### *Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other*

Title	File
Fiscal Agent Acknowledgement	<a href="#">95838b3b-640.pdf</a>

## Administrative Use

**Does your project include restoration or acquisition of land rights?**

No

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

Yes

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

Yes

**Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF? If so, describe here (1) the source and estimated amounts of any revenue and (2) how you propose to use those revenues:**

Yes, Reinvested revenues would be used to develop a mobile version of the same system to further reduce transportation needs and increase market supply of bio-fuel pellets. Estimated costs are undefined right now but can be developed

**Does your project include original, hypothesis-driven research?**

Yes

**Does the organization have a fiscal agent for this project?**

Yes, National Bank of Commerce

**Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?**

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 as "the provision of care,**

**treatment, education, training, instruction, or recreation to children")?**

No

**Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:**

Jeff Heller (Hallett Dock 7)