

Anaerobic Digester Energy System Project

Clean, renewable energy
from East Metro food waste

Project Summary

Applicant: Ramsey/Washington Recycling & Energy Board

Project partners: Ramsey County, Washington County, Dem-Con HZI BioEnergy

Project location: Shakopee, Scott County, MN

Total capital cost: \$ 100,000,000

20-year operations costs: \$ 155,300,000

Legislative request: \$ 30,000,000

HF 4938 | SF 4889

Request: \$ 30,000,000

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Project Scope

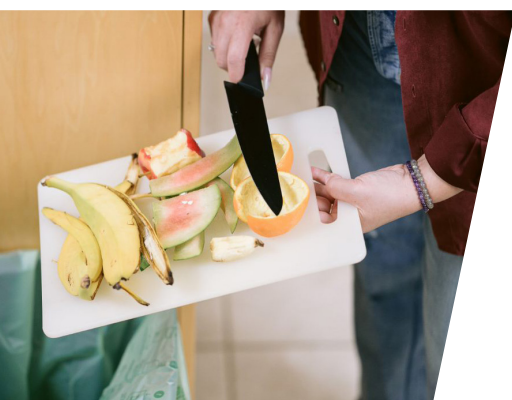
This project will process an estimated 40,000 tons of food waste and 35,000 tons of other organic material per year. In **public-private partnership** with Dem-Con HZI BioEnergy, this waste will be managed using anaerobic digestion.

Anaerobic digestion is a biological process that breaks down food waste with the help of microbes in a large, airtight tank or container. The primary end-product from digestion is clean, renewable energy known as **renewable natural gas**, which can be used as vehicle fuel or for utilities.

This project also uses a biochar process for the solid byproduct of digestion. **Biochar** is used for soil amendment, remediation and filtration, and a way to sequester carbon.

The biochar process also allows for a first-of-its-kind potential mitigation solution to PFAS in the waste stream.

Ramsey and Washington counties are requesting \$30 million from the state for the design, construction and operation of this public-private partnership project. This investment will prevent food waste from going to landfills. This innovative project requires long-term financial commitment to bring next-generation technology to Minnesota.



Project Benefits

- This project aligns with the U.S. Environmental Protection Agency's food recovery hierarchy – reducing the need for landfilling and incineration.
- Ramsey and Washington counties' investment into co-collection and digestion of food waste serves as a commercial-scale **demonstration project for other municipalities** launching food waste management systems.
- Investment in anaerobic digestion will create **75,000 tons per year of new organics processing capacity in Minnesota**.
- Dem-Con will put renewable natural gas from digestion into a Minnesota utility pipeline. This means **carbon-negative fuel from food waste displacing fossil fuels in Minnesota's energy system**.
- Greenhouse gas emissions will be **reduced by 31,914 MTCO₂e annually** compared to if food waste went to a landfill.

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Project Background

Minnesota's statutes include a goals of 75% recycling by 2030, 100% clean energy by 2040 and being carbon neutral by 2050. Organics (such as discarded food), **make up over 20% of collected trash**. However, no curbside organics collection programs currently exist in Ramsey or Washington counties due to high start-up costs and logistical barriers. R&E developed the **Food Scraps Pickup Program** to address this, ensuring all households in the two counties can recycle their food scraps easily from home.

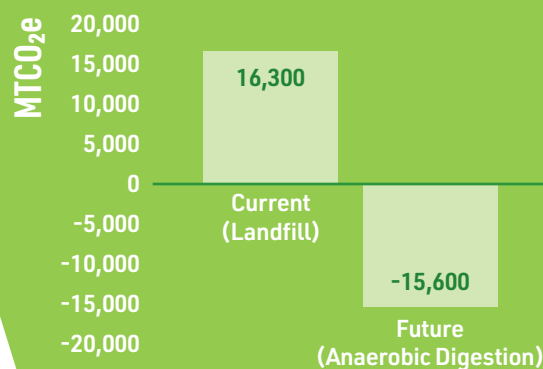
The program uses specially-designed compostable bags, which are collected with trash and separated using robotic sorters at the R&E Center. The recovered food scrap bags, along with other organic materials recovered from the trash, will then be processed through anaerobic digestion.

A key limiting factor in Minnesota is the infrastructure to process organics into beneficial products. Composting is the traditional method, but **anaerobic digestion** has the added benefit of producing biogas, which can be used to produce clean, renewable energy – including carbon-negative transportation and utility fuel called **renewable natural gas**.

Dem-Con Companies and Hitachi Zosen Inova will build a new anaerobic digestion facility in Shakopee, Minnesota, and partner with SMSC for composting and sourcing wood waste needed for the digestion mix. The new facility will produce 170,000 MMBtu of renewable natural gas and 10,000 tons of biochar each year. This will help reduce greenhouse gas emissions, **equivalent to removing over 6,100 cars from the road annually**.



Greenhouse Gas Emissions from Ramsey/Washington Food Waste



About R&E

Ramsey/Washington Recycling & Energy (R&E) is the organization through which Ramsey and Washington counties work jointly to manage waste responsibly. R&E owns and operates the Recycling & Energy Center in Newport, Minnesota. This facility manages 450,000 tons of trash generated in the two counties annually, about 14% of the state's trash, producing refuse-derived fuel for waste-to-energy and recovering over 14,000 tons of recyclable metals from the waste stream each year. R&E also administers activities and programming to reduce landfill waste. The counties have a combined population of over 810,000 and 70,000 businesses across urban, suburban and rural areas.



For more information:

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