

# Methane Capture and Anaerobic Digesters



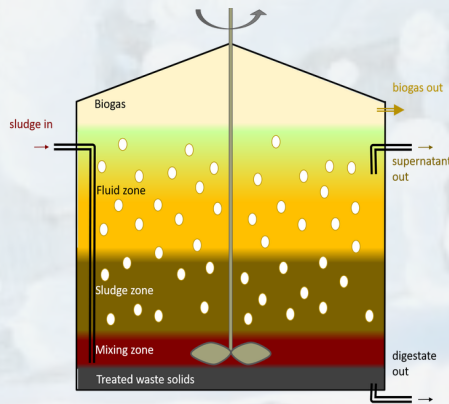
## What is Methane?

Methane (CH<sub>4</sub>) is a greenhouse gas that is created when biological matter decays in an environment without oxygen.

When released into the atmosphere, it adds to global heating. Methane has ~30 times the heating potential as carbon dioxide in the short term, and ~85 times the heating over a 20 year period. It causes more heating than carbon dioxide.

## Digesters Harness Methane for Energy

Methane is also a source of carbon-rich energy when burned. Burning methane releases carbon dioxide into the atmosphere, but in a less harmful form. Anaerobic digesters allow for biological material to be taken into a closed tank to create methane, then transmits this gas to a place where it can be burned to create energy.

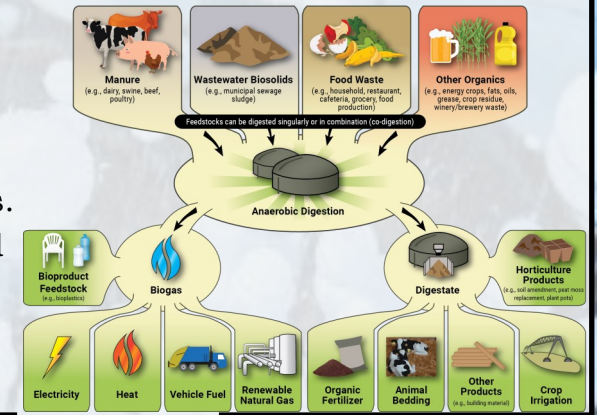


## Benefits and Risks of Anaerobic Digesters

Benefit: food waste is readily and perpetually available to fuel digester and create localized energy for remote sites.

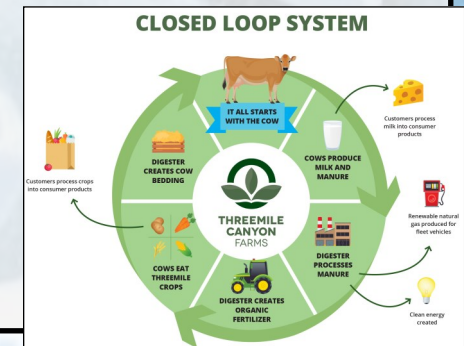
Risk: conversion of methane into carbon dioxide reduces—but doesn't entirely prevent carbon emissions.

Risk: Potential ground-water contamination, and odors nearby.



## Case study: Threemile Canyon Farm

One company in our area currently operates an anaerobic digester in Boardman, OR. This large dairy takes waste from dairy cows, creates methane from decomposition, and burns this methane to partially power its farm. It also generates and sells carbon offsets from this process to carbon markets in California.



# Materials Management: Recycling and Composting

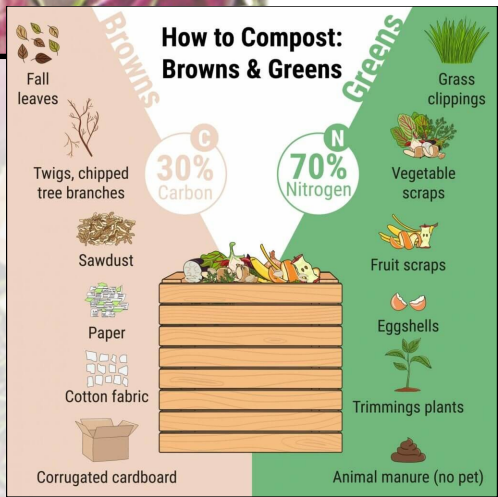
## Recycling

Materials used in products are usually extracted from the Earth. By recycling certain things that can be re-used, we can reduce the amount of material that needs to be extracted for use.

Recycle	Trash
<p><b>Yes</b></p> <p>All Recyclables Should Be Empty, Clean, and Dry</p> <p><b>Plastic Containers</b> Plastics #1 and #2 only</p> <p><b>Glass Bottles &amp; Jars</b> (Labels do not need to be removed)</p> <p><b>Metal Cans</b></p> <p><b>Paper</b></p> <p>Place recyclables loosely in the container (no trash bags). Bagged recyclables will be sent to landfill.</p>	<p><b>Yes</b></p> <p><b>Non-Recyclable Plastic and Paper</b> Plastic bags, milk &amp; egg cartons, juice boxes, frozen food boxes, plastic film, utensils, plastic clam shells, dirty napkins, to-go cups, paper towels, baby wipes, greasy pizza boxes, windowed envelopes, etc.</p> <p><b>Shredded Paper</b> (Please bag)</p> <p><b>Styrofoam</b> To-go containers, cups, packaging materials, etc.</p> <p><b>Kitchen Grease</b> (In a sealed container)</p> <p><b>Non-Recyclable Materials</b> Papered envelopes, hoses, clothes/shoes, dishware, ceramics, ods, foil, etc.</p> <p><b>Hard Plastics #3-7</b> Buckets, toys, black plastic, microwave, food trays, flower pots, etc.</p>
<p><b>No</b></p> <p>Plastic bags/films • hard plastics • cartons mixed materials (packaged/windowed envelopes) bagged mail/magazines • see Trash section</p>	<p><b>No</b></p> <p>Electronic waste • hazardous waste paint • batteries • light bulbs • etc.</p>

## Composting

Composting living material, rather than throwing it away, helps us reduce our carbon emissions, and creates a wonderful garden fertilizer. Balancing “brown” carbon-rich materials with “green” nitrogen-rich ones helps build a healthy compost for us to incorporate into gardens!



## COMPOST

**FOOD SCRAPS & LEFTOVERS**

Fruits & Peels	Frutas
Vegetables	Verduras
Meat	Carne
Fish	Pescado
Dairy	Lácteos
Shells	Cáscara
Bones	Huesos
Bread & Grains	Pan
Coffee Grounds	Granos
Filters	Café Molido
Tea Bags	Filtros
Cut Flowers	Bolsas de Te
	Flores Cortadas

**FOOD SOILED PAPER & COMPOSTABLE PACKAGING**

Paper Bags	Bolsas de Papel
Paper Towels	Toallas de Papel
Paper Napkins	Servilletas de Papel
Soiled Cardboard	Cartón Sucio
Waxed Cardboard	Cartón Encerado
Certified Biodegradable	Paño Natural y Fibras
Compostable Service Items	Biodegradable Certificada
Natural Cloth & Fibers	Artículos de Comida Compostables

**NO:** Metal, Glass, Plastic, Packing Tape, Chemicals, Styrofoam, Peanuts, Diapers, Rubber Bands

## Food Waste Collection

Food in landfills creates methane, a greenhouse gas. By keeping food scraps and other living material out of landfills, we can reduce methane emissions, and create a healthy soil fertilizer!

## Case Study: Pendleton Sanitary Service Inc.

One waste management service currently conducting food waste collection is PSSI in Pendleton, OR. PSSI currently collects 4-5 tons of food waste per week from three locations around Umatilla County.



Food waste is composted at PSSI’s waste management facility, and becomes compost. This collection does not include meat and dairy, which have different composting requirements.