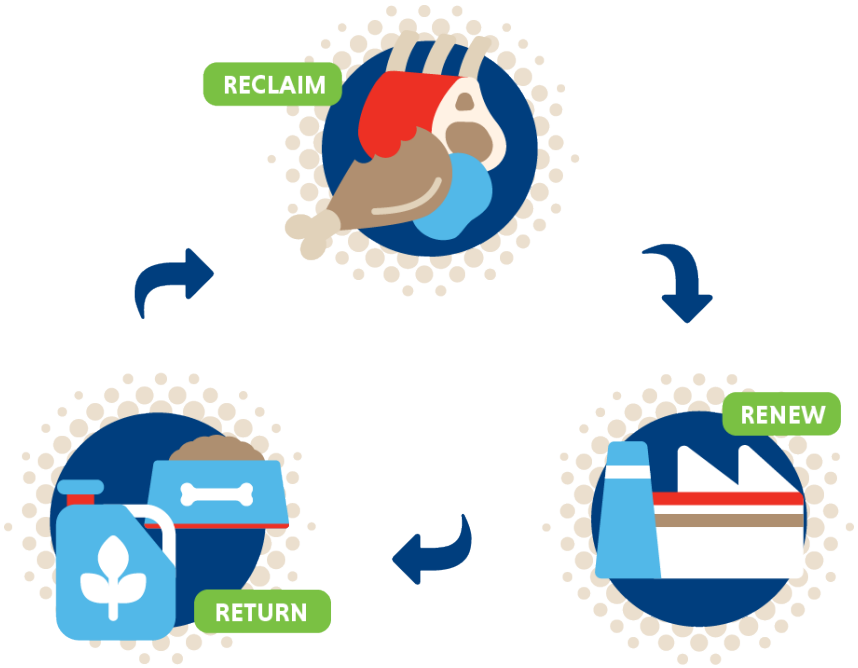
Sanimax's Journey in Sustainability

January 30th, 2025

IPPE Rendering Symposium 2025

Sanimax's Vision and Mission

To be recognized by our customers as the VERY BEST partner for organic materials collection and transformation



Our Company Profile

2500
EMPLOYEES

RECLAIM
ANIMAL BYPRODUCTS
USED COOKING OIL
HIDES & SKINS

GLOBAL CUSTOMERS

Sanimax Locations (Global)

CANADA
Calgary, Alberta
Guelph, Ontario
Hamilton, Ontario
Lévis, Québec
Montréal, Québec
St. Albert, Ontario
St. Rosalie, Québec
Verchères, Québec

USA
DeForest, WI
Green Bay, WI
South St. Paul, MN
Winder, GA

COLOMBIA
Barranquilla
Bogotá
Medellín

BRAZIL
Eneas Marques
Ipuaçu
Tupassi

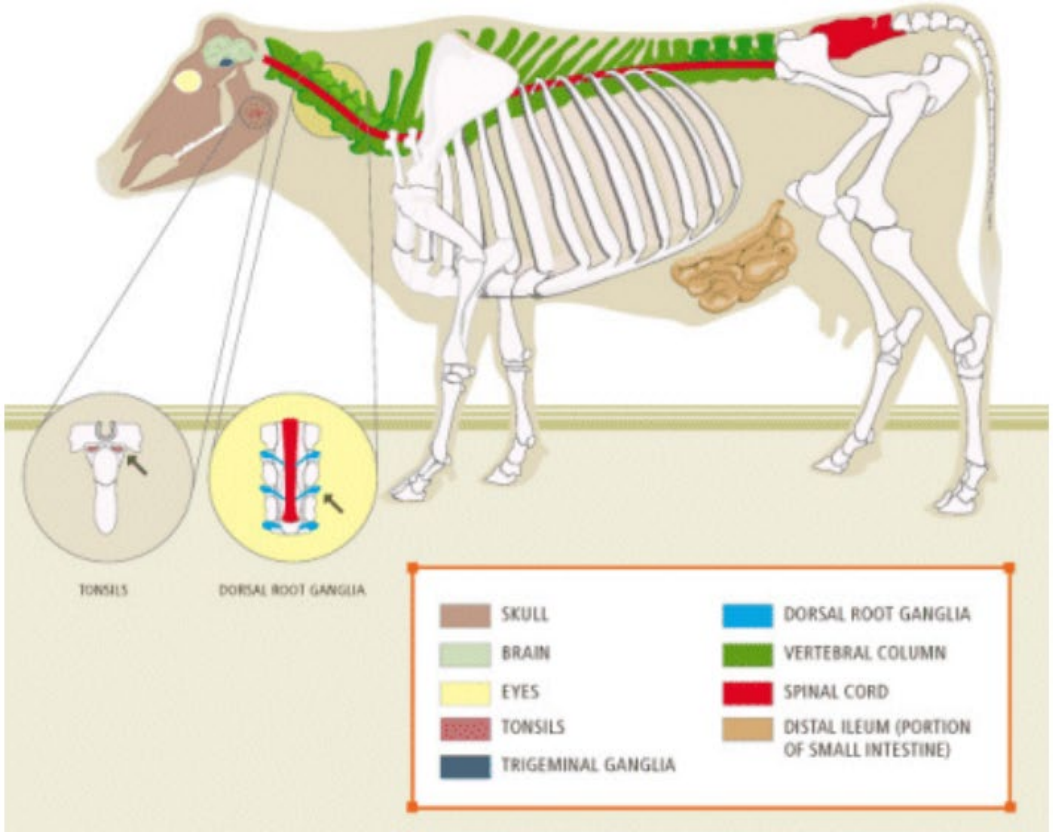
Sustainability project #1: Biomass Boiler

- The First case of BSE (Mad cow disease) in a Canadian-born cow was found in May 2003
- In 2007, Canada prohibited the use of Specified risk material (SRM) from Cattle to be fed to any animal (including Pets) or used in fertilizers.
- The Sanimax Quebec City plant is our ruminant processing facility in Canada and processes the SRM by-products where the SRM meal was going to landfill for disposition.
- As an opportunity to further Sanimax's sustainability goals a Biomass boiler was built in 2012-2013 to incinerate the SRM meal and produce energy for our Quebec City rendering plant.
- The biomass boiler can incinerate between 200 to 250 mt/ week and generate around 30-40% of the plant's needs in steam
- It avoids using 4,000,000 cubic meters of natural gas and generating 7,600 mt's of GHGs

SRM parts processed

Specified Risk Material

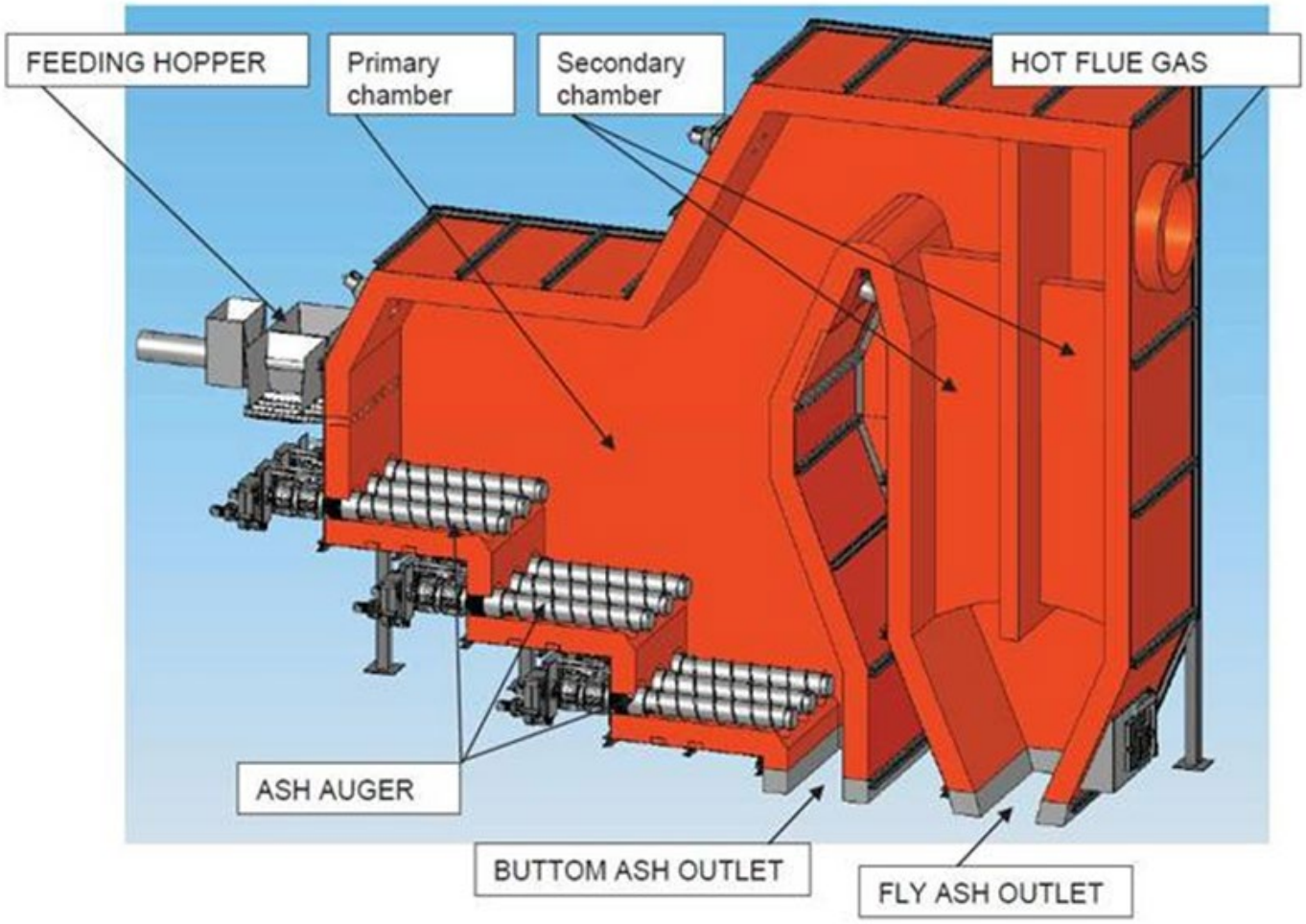
Illustrated below are the specified risk materials and associated tissues that are required to be removed from cattle.



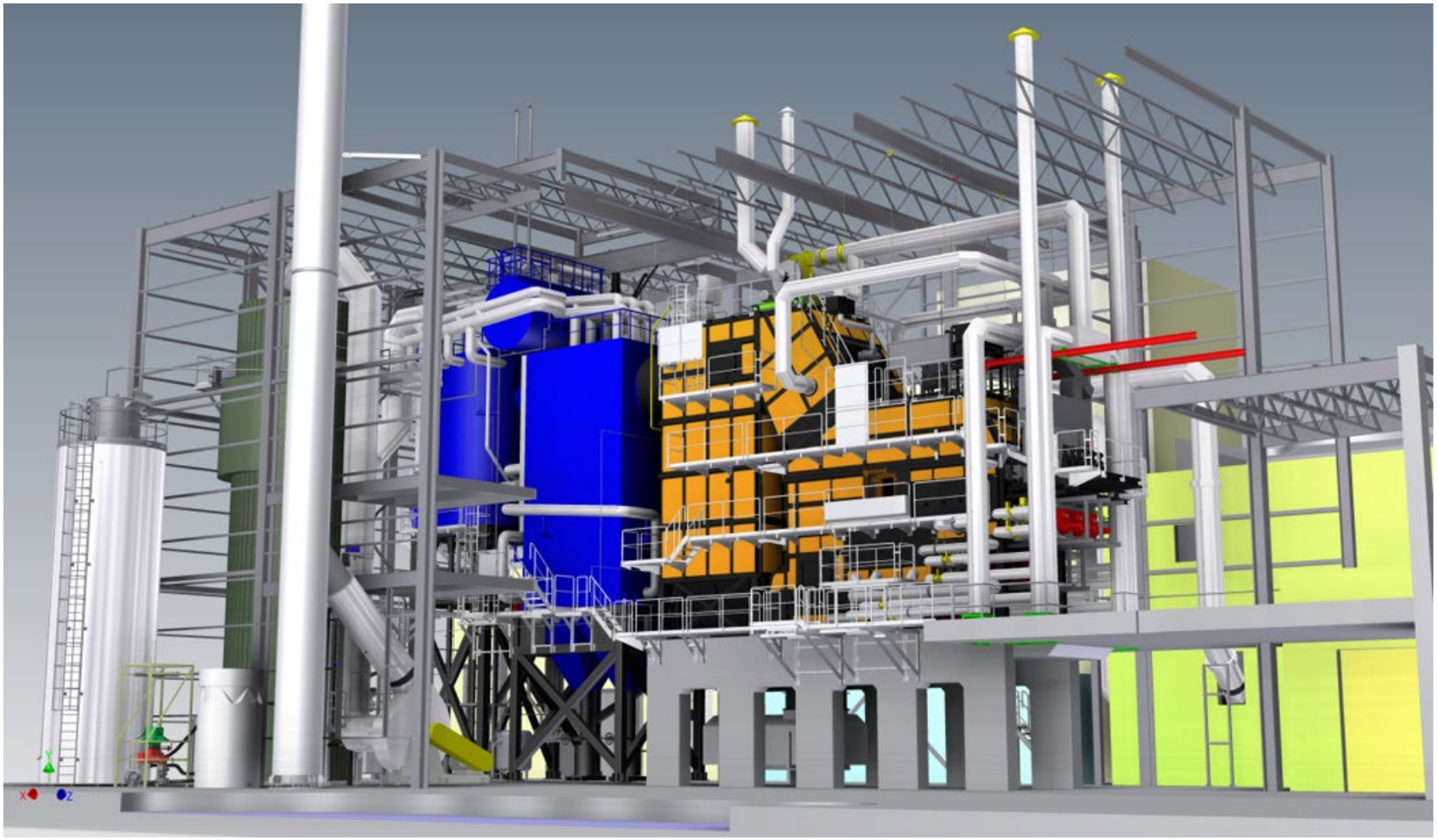
Benefits of the Biomass Boiler

- Avoid sending SRM meal to landfill
- Avoid burning fossil fuels such as natural gas
- Reduce greenhouse gas emissions (GHGs)
- Generates steam from the biomass boiler for our production process
- The Province of Quebec in Canada is part of the carbon credits market jointly with the State of California, tons of CO2 emitted must be partially offset with such credits, the biomass boiler reduces this obligation
- CI score (carbon intensity) of products manufactured in our Quebec plant are lower as a result of the biomass boiler

How it works


FEEDING HOPPER
Primary chamber
Secondary chamber
HOT FLUE GAS
ASH AUGER
BUTTOM ASH OUTLET
FLY ASH OUTLET

Design of Biomass Boiler



In construction…

Outside view of the biomass boiler

Inside view of the biomass boiler

Biomass Boiler Facts

- The material burns at a temperature of 850 degrees Celsius (over 1500 degrees Fahrenheit) for a period of 2 to 4 seconds
- The temperature will completely destroy the prion that causes mad cow disease that remains in the SRM meal
- All that is left from the product in the end is ash
- This ash can be used in landfills as a covering medium (value add for landfill site)
- Air used in the biomass chambers derives from the plant and therefore also serves as an air treatment unit

Sustainability project #2: Entosystem

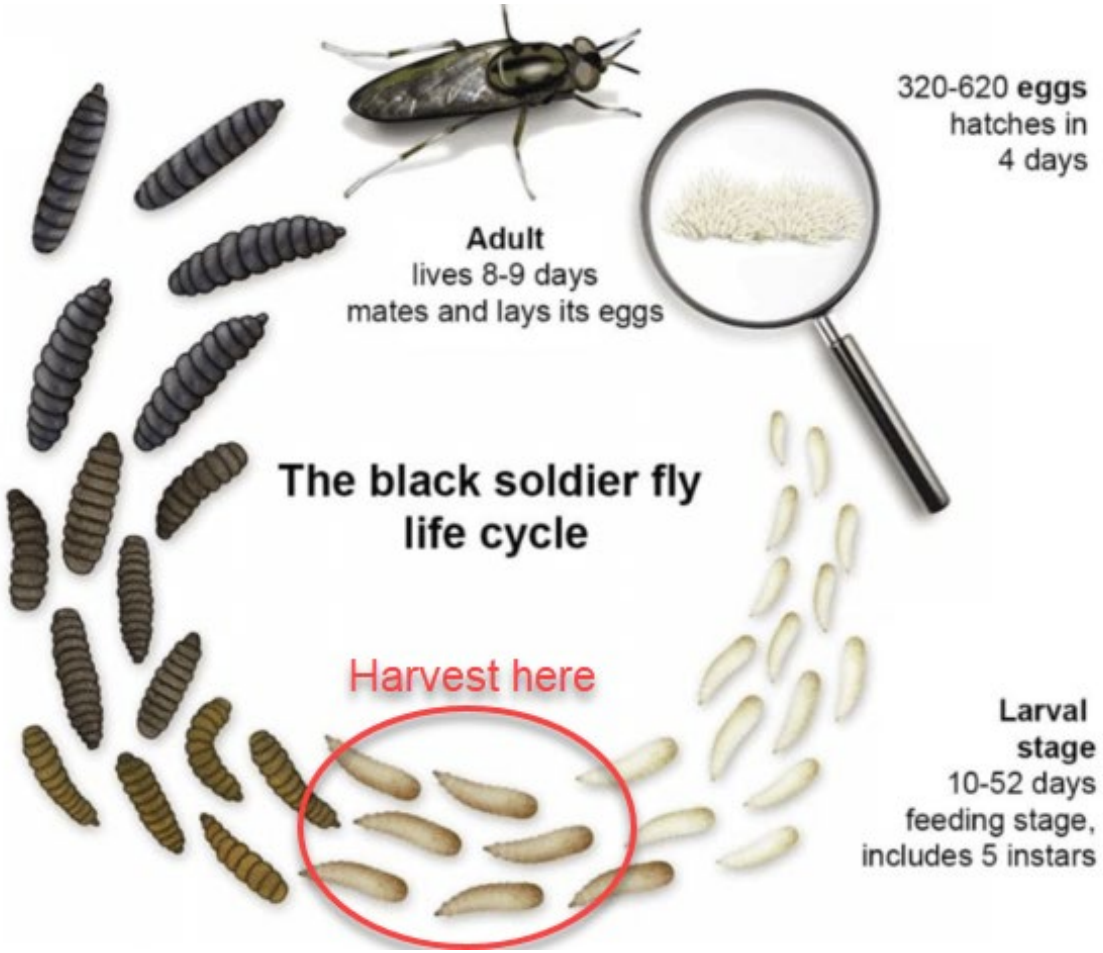
- The company is called Entosystem with it's origins starting in 2016 and is based in the city of Drummondville in the Province of Quebec
- Company is a start-up, starting in the apartment of one of the founders!
- Young, passionate and dynamic team which has grown to 75 employees today
- Sanimax was already collecting organic materials from its raw material customers, the organic matter will serve as an input for Entosystem
- The end result is that the organic matter can be re-valued into dried larva and organic fertilizer, called frass

entosystem

The Entosystem Insect

- Entosystem is using the BSF (black soldier fly) insect
- Other companies may use mealworms, crickets or grasshoppers
- BSF can eat waste easily, do not have any known diseases and grow rather quickly
- The larva will grow rather quickly, growing 10,000 times their size in 10 days (analogy: rabbit becoming an elephant)
- Do not sting or bite!

Lifecycle of Black Soldier Flies



Important Facts

From Scraps to Solutions!

- The plant is 100,000 sq.ft and will have the capacity to process 90,000 MT of material per year (250 MT/day) majority of which will be organic material (wasted fruits and vegetables), supplemented by grain and grain by-products
- Finished product produced will be 5,000 MT of dried larva and 15,000 MT of Frass per year.
- The raising of larva will occur 24/7, 365 days per year
- Compared to modern agricultural supply chains, the insect protein supply chain occurs all under one roof
- Finished products consists of dried Larva for Backyard Chickens and Frass (Insect manure) used for fertilizer
- The frass will be sold as fertilizer and has a NPK of 3-2-2
- Entosystem is carbon negative, saving 30,000 mt's of CO2/ year

Entosystem Finished Products

DRIED LARVAE

FERTILIZER (« FRASS »)

ENTOMOLOGIC MEAL

ENTOMOLOGIC OIL

Entosystem Plant in Drummondville, Quebec

Questions and/or comments?