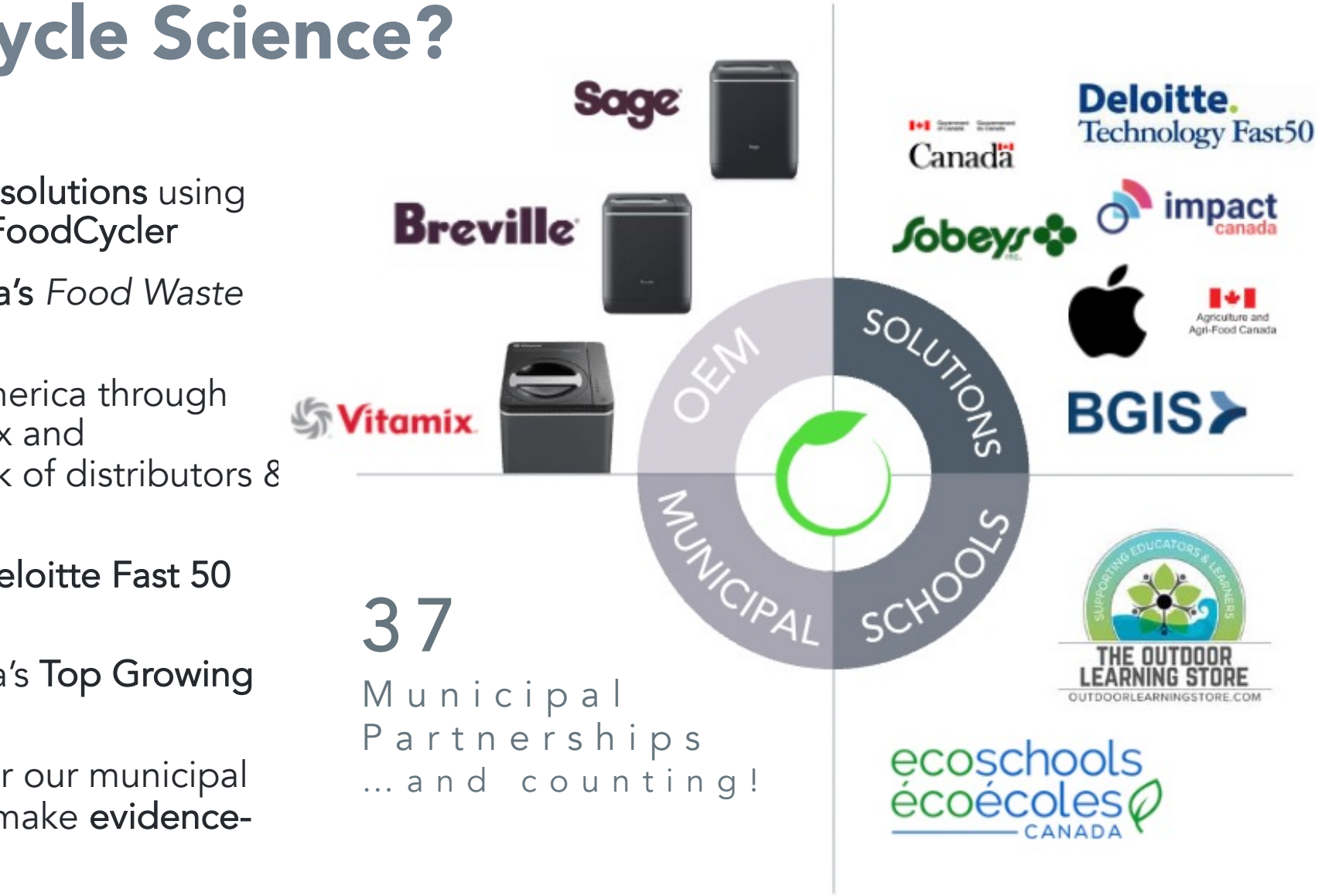
FOODCYCLE SCIENCE

FoodCycler Municipal Solutions

The Future of Food Waste

Who is Food Cycle Science?

- We offer **food waste diversion solutions** using on-site technology called the **FoodCycler**
- Semi-finalists in **Impact Canada's** *Food Waste Reduction Challenge*
- Products available in North America through FoodCycler Municipal / Vitamix and internationally through network of distributors & OEM partners
- Selected as one of the **2021 Deloitte Fast 50 CleanTech** award winners
- # 81 on Globe & Mail's Canada's **Top Growing Companies** for 2021
- We collect and analyze data for our municipal partners to help communities make **evidence-based decisions**



Trusted Municipal Solution

Thirty-Seven Municipal Partners...and counting!

The Problem With Food Waste

- **63%** of food waste is avoidable
- Household waste is composed of **25-50%** organic waste
- Food waste weight is up to **90%** liquid mass (which is heavy)
- The average household spends **~$1,766** on food that is wasted each year
- Methane emissions from food waste are responsible for **~11%** of global methane emissions

Municipal Impact

WASTE & LANDFILL COSTS

- ~**25-50%** of household waste is organics
- Landfills are quickly filling up, creating substantial costs for communities
- Hauling, transfer, and disposal services are a major cost factor to municipalities

ENVIRONMENT

- Landfilled organic waste produces methane, which is **25 times** more harmful than CO_2
- 1 ton of food waste is equivalent to ~1 car on the road for one year

COMMUNITY

Food in the garbage:

- More frequent collection or trips to the disposal site
- Unpleasant odours
- Animals, pests & other visitors

Removing food waste from garbage:

- Volume is reduced by up to **50%**
- Less frequent collection, fewer trips to disposal site, save on bag tags
- Keeps odours out, makes garbage much less *interesting"* for animals

"Haven't We Solved This Already?"

GREEN BINS

- **GHG emissions** from curbside collection
- **Contamination** is an ongoing challenge
- **Expensive** and relatively **low-participation** rates
- **Safety** concerns from additional trucks on the road
- Requires **ongoing maintenance** of processing infrastructure

BACKYARD COMPOST

- **Cost-effective** but can also be **labor-intensive**
- May attract pests/animals or create unpleasant **odors**
- Most users **do not compost in winter** or inclement weather
- Adoption rates are relatively **low and stagnant**

LANDFILL

- **Easiest solution** and often perceived as the most cost-effective in the short term
- Waste is typically **out of sight and out of mind** for consumers
- High levels of GHG emissions, particularly **methane**
- Long-term **environmental hazard** requires monitoring / maintenance

Our Solution

In Three Simple Steps

1. Add waste to bucket
2. Add bucket to unit
3. Press Start. That's it!

Vegetable & Fruit Scraps

Starches

Fish & Poultry Bones

Dairy Products

Tea bags & Coffee grinds

Egg shells

Nut shells, nuts & seeds

Meat, poultry & fish

The resulting by-product can be used in many applications, including gardening, farming, and more.

FOODCYCLE SCIENCE

Reduces Food Waste Volume By 90%

1 kg (2.2lbs) of wet,
smelly food waste

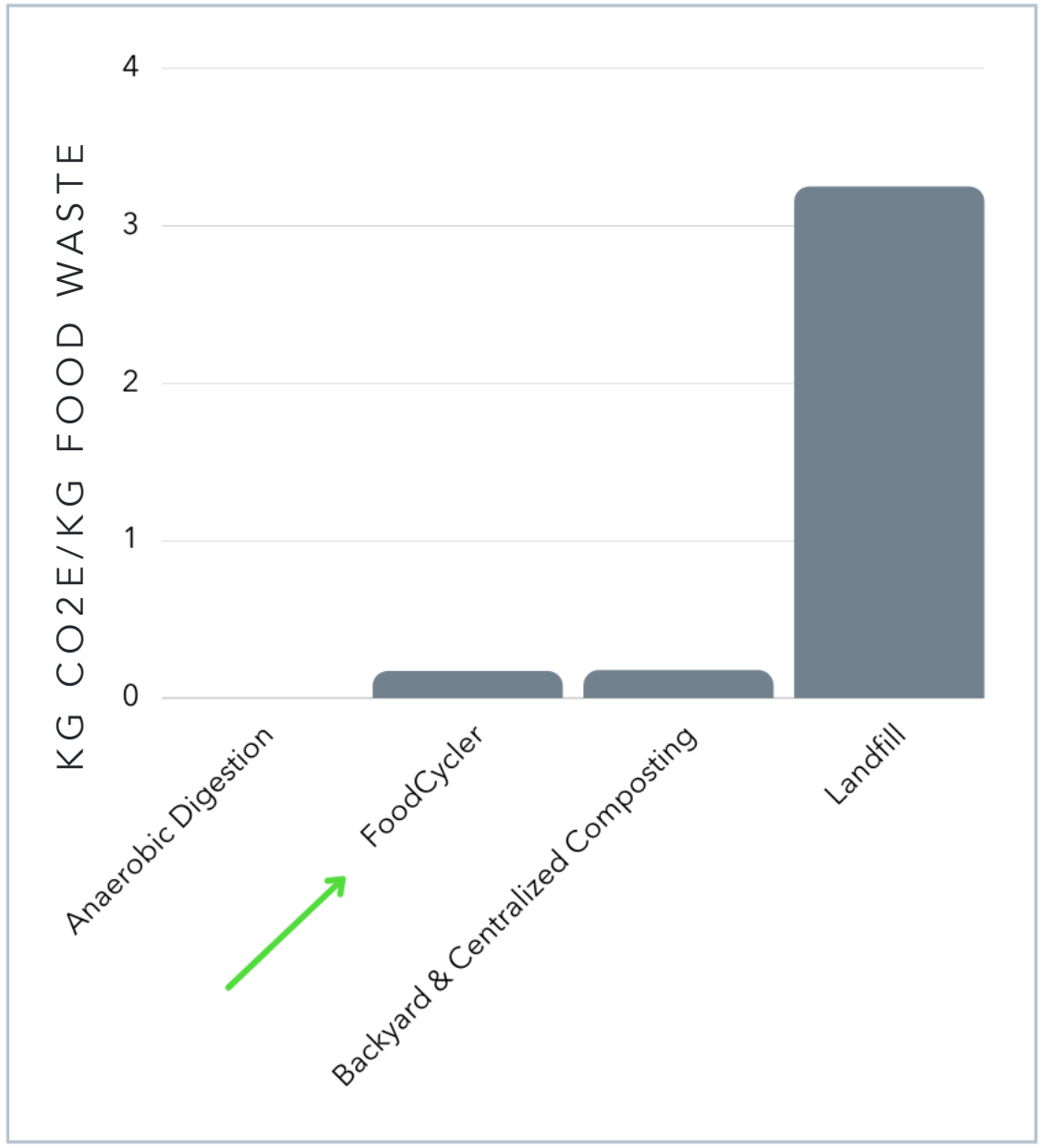
100 g (1/4lb) of dry, sterile
& odorless soil amendment

4-8 HOURS + 0.8 kWh
~8 cents / cycle

Lifecycle Analysis

FOODCYCLER IS COMPARABLE TO

- Backyard composting (if done correctly*)
- Curbside collection with central composting (assuming zero transportation emissions)
- FoodCycler offers **>95% reduction in CO_2e** vs. sending food waste to landfill even after accounting for production-related emissions



*Incorrect backyard composting can lead to methane gases and odors

Economic Impact

TRADITIONAL ORGANICS SERVICES

HAULING FEE

+

TRANSFER STATION OPERATION

+

DISPOSAL FEE

=

EXPENSIVE, ONGOING, VARIABLE

OUR SOLUTION

NO TRANSPORTATION OR PROCESSING

=

FIXED COST, HIGH YIELD, EFFECTIVE

Social Impact

THE TIME IS NOW

- Constituents want **solutions** to reduce their environmental impact
- Waste is perceived as a government problem and **regulations** are coming
- Food waste is "low-hanging fruit" to achieving higher **diversion** and addressing the environmental impact of waste

"It alleviates a lot of the concerns that people might have with backyard composting. The time commitment, the location, pests and animals and everything like that."
– Kylie Hissa, Strategic Initiatives Officer in Kenora

"I've received a number of positive messages from residents saying, "sign me up, where can I get mine." I'm 100 per cent in favor of it."
– Deputy Mayor Lyle Warden, South Glengarry

"We were extremely happy with this program and loved that it made us aware of our daily waste."
– Program participant in South Glengarry

"It's a great tool to reduce household waste. Appreciate that the municipality is being innovative and piloting different solutions."
– Program participant in Hornepayne

The FoodCycler Pilot Programs

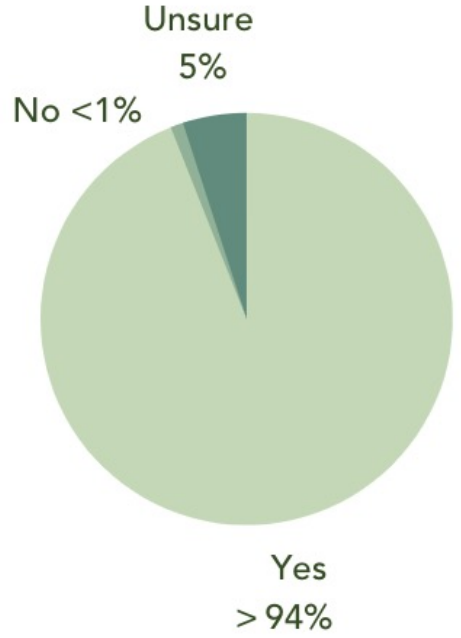
>1,200 households

14 municipalities have completed their on-site food waste recycling programs with overwhelmingly positive results.

Net New Diversion

Each participating household is estimated to divert between 661.4 lbs and 881.9 lbs of food waste annually.

Would you recommend FoodCycler?



Average overall user experience

4.6

Our Food Waste Recycling Pilot Programs

Data-focused approach

PROGRAM TIMELINE

START	12 WEEKS	END	NEXT STEPS
Residents obtain their FoodCycler from the Municipal Office (or other designated location).	Participants use their FoodCycler for a period of **12 weeks**. Weekly cycles are tracked to estimate **total diversion** achieved throughout the program.	Participants fill out **exit survey**, providing a review of the program and any other feedback. Survey results are **analyzed** to evaluate program success and a **report** is prepared for the municipality.	Full program design and implementation. Identify **grants** and government funding available.

Pilot Investment Options

FoodCycler Cost: **$250 /unit**	
Standard Pricing Plan	**Cost-Sharing Plan**
Municipal investment: **$250 /unit**	Municipal investment: **$125 /unit**
Resident investment: **$0**	Resident investment: **$125 /unit**

Pilot Scope Recommendations

Pilot Scope	5-year Diversion	Standard: Total Municipal Investment **	Cost-Sharing: Total Municipal Investment **
100 households	200 tonnes	$25,000	$12,500
250 households	500 tonnes	$62,500	$31,250
500 households	1000 tonnes	$125,000	$62,500

**Plus shipping costs and applicable taxes.

FOODCYCLE SCIENCE

Thank You!

Kassia Régnier
Project Coordinator
Email: kassiar@foodcycler.com
Phone: 613-861-1721

Alex Hayman
Director of Strategy
Email: alexh@foodcycler.com
Phone: 613-979-4167