

# 17<sup>th</sup> Technical Training Series



**April 3-6, 2017 · Long Beach Hyatt**  
200 South Pine Avenue · Long Beach, California, 90802





# Rethinking Food Waste

## Food Waste Prevention/Rescue/and Recycling

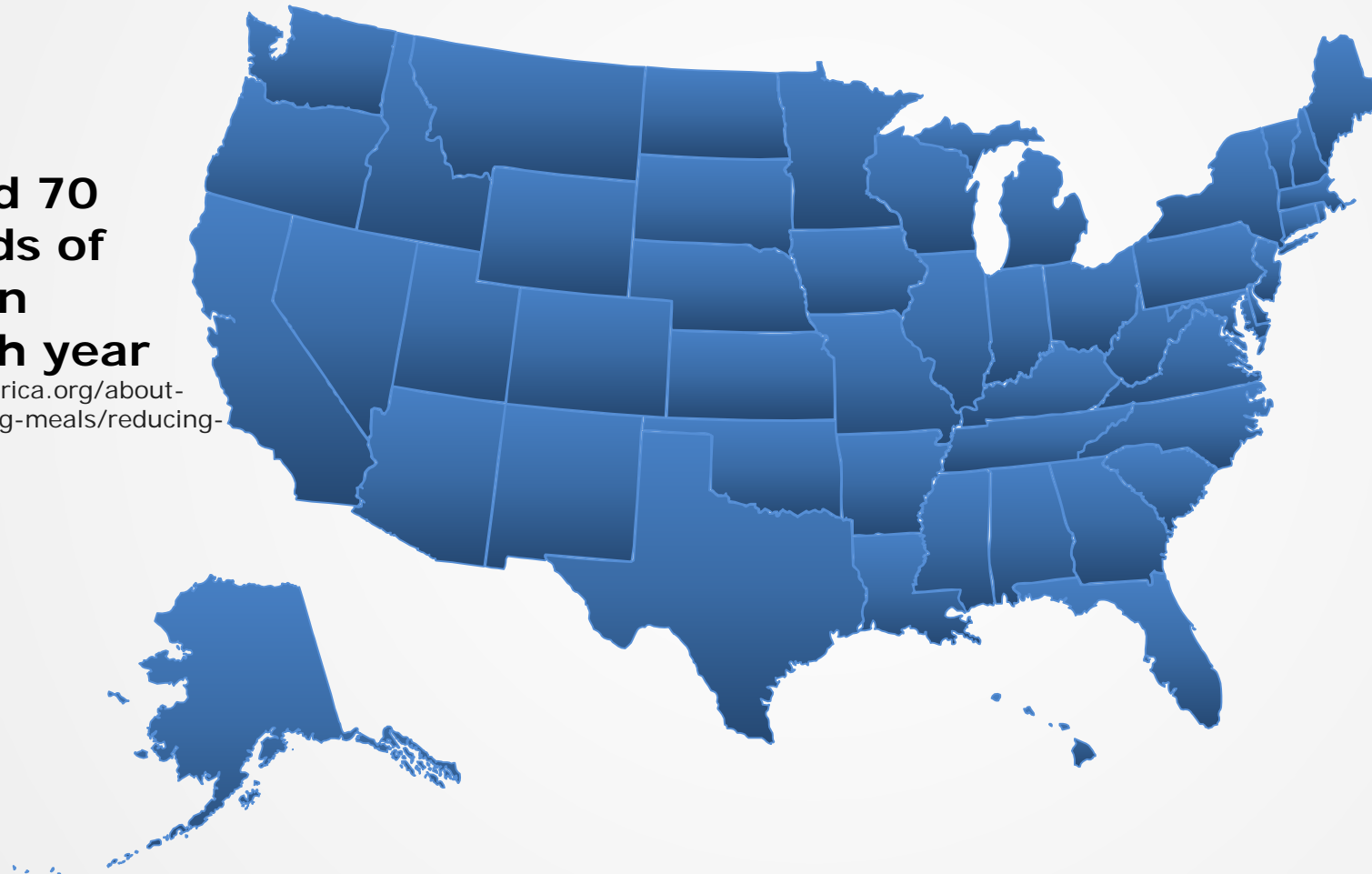
LEA/CalRecycle 17th  
Technical Training  
Series

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Ralphs Grocery

# Food waste in the United States

**An estimated 70 billion pounds of food waste in America each year**

(<http://www.feedingamerica.org/about-us/how-we-work/securing-meals/reducing-food-waste.html>)



An estimated 25 – 40% of food grown, processed and transported in the US will never be consumed.

When food is disposed in a landfill it rots and becomes a significant source of methane - a potent greenhouse gas with 21 times the global warming potential of carbon dioxide.

More food reaches landfills and incinerators than any other single material in municipal solid waste (MSW).

(<http://www.feedingamerica.org/about-us/how-we-work/securing-meals/reducing-food-waste.html>)

# Food waste in California



- Californians throw away nearly **6 million tons** of food scraps or food waste each year.
- This represents about **18 percent** of all the material that goes to landfills.

(<http://www.calrecycle.ca.gov/Organics/Food/>)

# Recycle Logo Diagram

## Old Process

- Every day, some 300 Ralphs/Food 4 Less grocery stores produce **150 tons** of food waste.
- Unsellable food brought to Compton distribution facility for collection.
- Trucked to Bakersfield **6x** per day = 1200 miles of diesel truck traffic.
- Significant impact on environment and significant cost to company.

## New Process

- Installed an anaerobic digestion system at distribution facility.
- Timeframe was 4 years from design to start-up.
- Feedstock is taken in and biogas is produced, providing power for the campus.
- Anything that cannot be sold or donated comes to the site.
- Waste stream is turned into an energy resource for the 49 acre distribution facility, which includes a creamery and corporate offices for Ralphs and Food4Less, along with a 650,000 square-foot distribution center.

# Recovery System Operation

- The process starts when food is brought to the center and put through a blending system that removes any inorganic material -- namely packaging, such as plastic, metal and glass -- and liquefies the food. What's left is just organic material that's mixed with wastewater from the creamery.

# Recovery System Operation

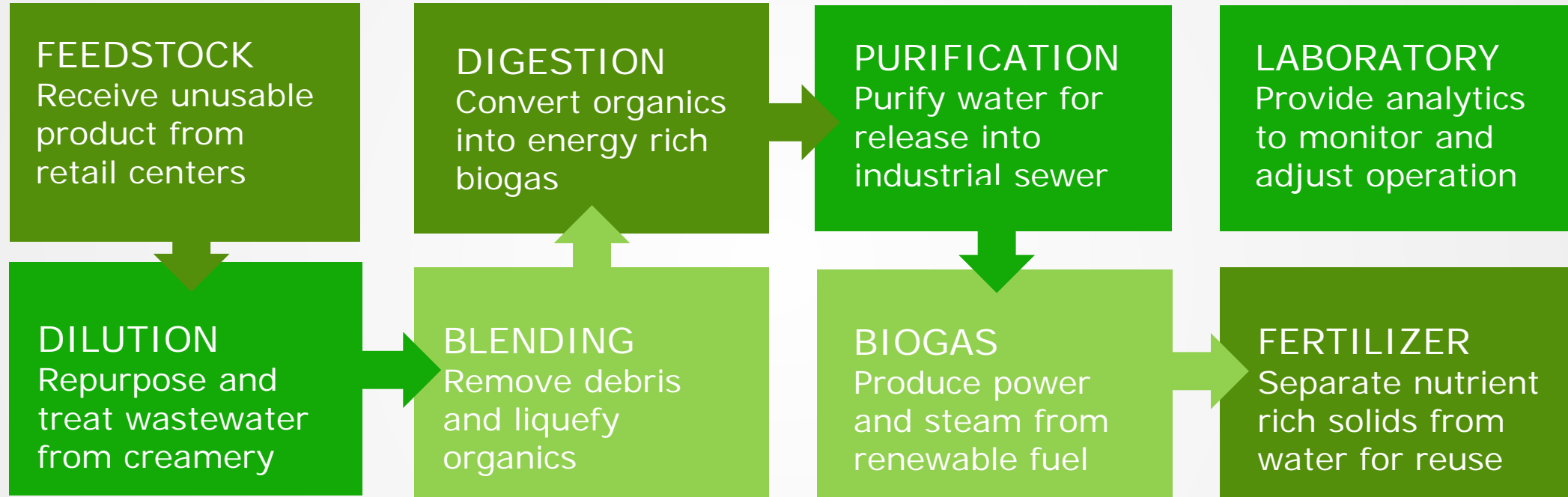
- That mixture goes into an anaerobic digester, an oxygen-free piece of equipment full of microbes that break the food down, producing biogas and a mix of nutrients and minerals. The biogas is then compressed and purified on its way to the campus' microturbines and boilers, where it takes the place of nearly all of the natural gas that the center previously used. That biogas now provides 20 percent of the campus' power and has delivered an 18 percent return on investment for the project so far.

# Recovery System Operation

- All the water that's left gets purified and released. The remaining physical material -- the minerals and nutrients -- is concentrated into a form that can be used as a fertilizer.
- A third party removes the digestate from the site, refines it and sells it as compost.



# Flow Diagram

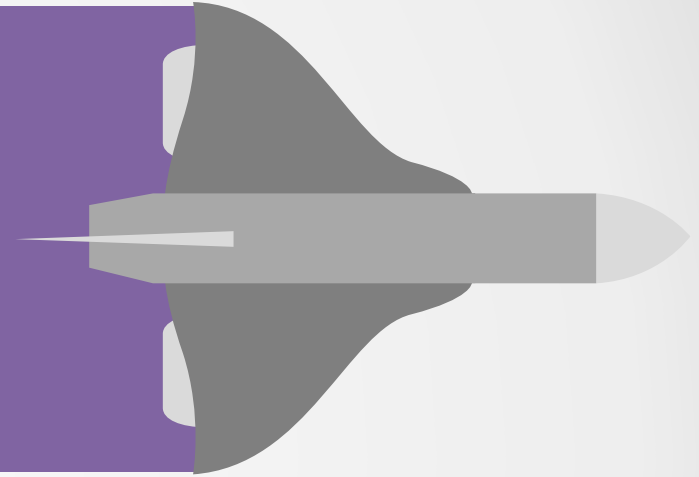


**Kroger/Ralphs/F4L  
DRIVING  
INNOVATION**



# Innovation Concept

As a company, we are constantly looking for innovative methods to run the business more efficiently. Among our goals are ways to look after the local environment and support the local communities in which we do business.



# Kroger/Ralphs/F4L Innovation

Largest known 'solid organics to energy project' in North America.

First Supermarket or Distribution center in the world to generate renewable energy on-site with unsold organics.

First U.S. Supermarket chain to manage their own unsaleable organics.

Cleaning concentrated waste wwater from our on-site food processing facility for more responsible disposal.