

## DOCKETED

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# ANAEROBIC DIGESTION FACILITY

PERRIS, CA

335,000 TONS PER YEAR



**CR&R**  
INCORPORATED

environmental services

the face of a greener generation 

## CORE VALUES and STANDARDS

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- To maintain the trust of our customers by conducting ourselves professionally and by providing services that meet or exceed customer expectations
- To provide our employees with a supportive work environment that includes opportunities for advancement and recognition for performance
- To advance our reputation as the innovator in our industry
- To give back to the communities and customers we serve through our involvement in and support of charities and non-profit organizations



## OVERVIEW

- 50 Municipal Contracts
- 12 Processing Contracts
- 900 Trucks
- 1,500 Employees
- Serve Over 2.5 Million Customers
- 10 Solid Waste Service Centers
- 5 Transfer Stations / MRFs
- 2 Landfills
- 12 Haulaway Service Centers



## QUALIFICATIONS

- Extensive Experience with Integrated Waste & Recycling Services
- Leader in Innovation & Technology
  - Three Automated Cart System
  - Mixed Solid Waste Processing Facility
  - Bio-Filter
  - Anaerobic Digestion Facility
- Experienced & Qualified Management Team
- Municipal Contract Retention



# EVOLUTION OF SOLID WASTE MANAGEMENT **1970's**



**Trash Bags and Cans**



**Landfills**

# EVOLUTION OF SOLID WASTE MANAGEMENT **1980's**



**Trash Bags and Cans**



**Landfills**



**Recycling Crates**



**Recyclables**

# EVOLUTION OF SOLID WASTE MANAGEMENT **1990's**



**Material Recovery Facility  
MRF**



**Three Automated Streams**



**Residual**



**Recyclables**



**Alternative Daily Cover**

# EVOLUTION OF SOLID WASTE MANAGEMENT 2010's



**Material Recovery Facility - MRF**



**Anaerobic Digestion Facility**



**Three Automated Streams**



**Residual**



**Recyclables**



**Renewable Natural Gas**



**Fertilizer**

*“Supplying energy to a growing world population while reducing greenhouse gas emissions is one of the grand challenges that we humans must face this century.”*

*Dr. Lynn Orr  
Project Director*



ANAEROBIC DIGESTION TECHNOLOGY

**EISENMANN**

BIOGAS UPGRADING TECHNOLOGY



**Greenlane**

CONSTRUCTION MANAGEMENT



PROJECT ENGINEER



ARCHITECTS  
ENGINEERS  
PLANNERS

## ANAEROBIC DIGESTION PROJECT OVERVIEW



We will convert all of the organic (yard and food) wastes into fertilizer and renewable natural gas (RNG) to run our truck fleet.



This program will keep all of your city's organic waste out of the landfill, where they would naturally degrade and release methane into the atmosphere.



Methane is 26 times more damaging to the atmosphere than carbon dioxide.



Compressed Natural Gas (CNG) is the cleanest burning fossil fuel.



Anaerobic digestion (AD) is simply replicating Mother Nature in a more controlled and cost effective environment.

## ANAEROBIC DIGESTION PROJECT OVERVIEW



Our process runs 24/7 – 365 days/year and is fully automated.



Our process provides maximum flexibility – waste mix, percentage (%) of solids in the waste, mesophyllic, thermophyllic, up to four different mixes and temperatures can be run simultaneously.



No other facility in the U.S., operating or planned, can match our capabilities due to our exclusive technology contracts with Eisenmann and Greenlane.



Our process is fully enclosed with zero untreated emissions and has the highest energy conversion rate in the industry due to its design and controls.

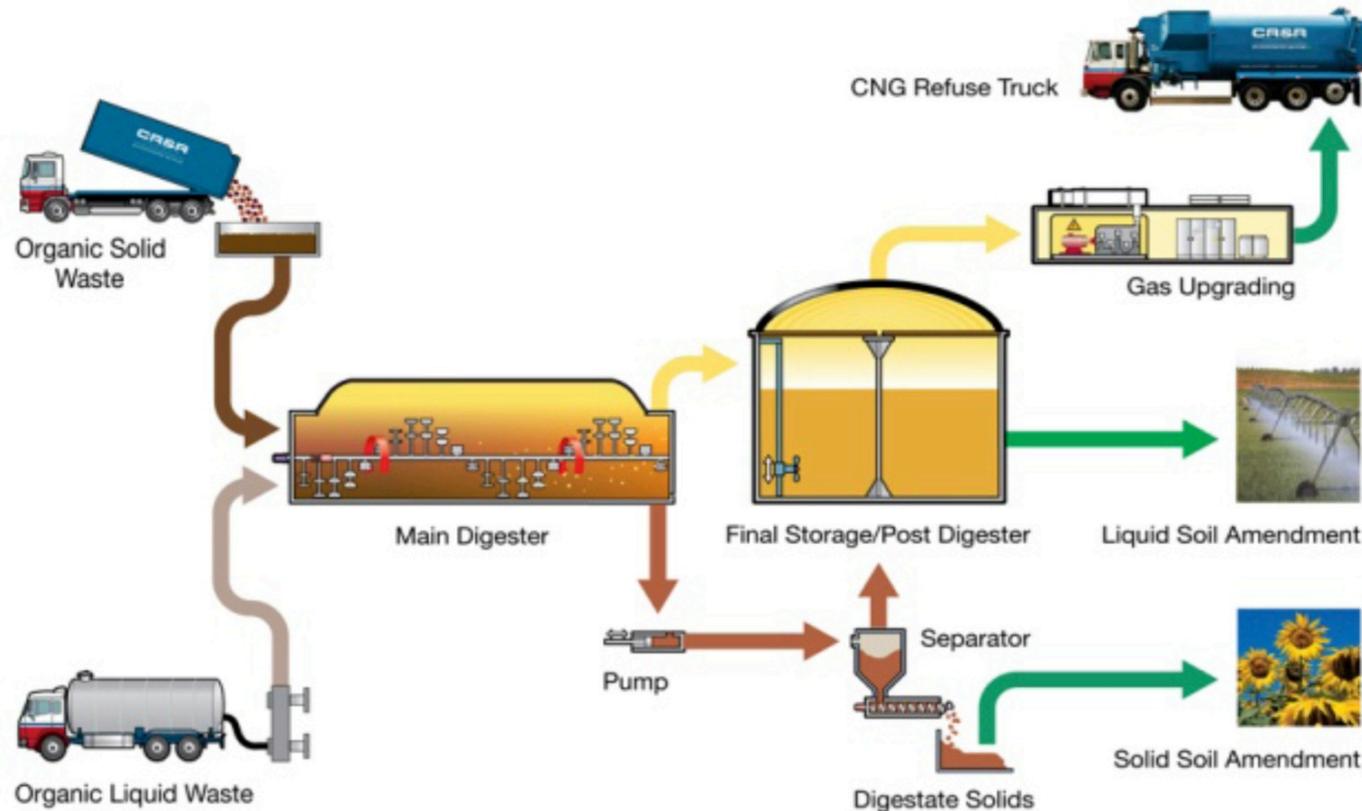


The plant will handle 335,000 tons per year, generate 4 million gallons per year (DGE) of RNG, and create about 260,000 tons of fertilizer both liquid and solid per year.



The plant will use “recycled” water from the local waste water treatment plant.

# ANAEROBIC DIGESTION - FLOW CHART



## ANAEROBIC DIGESTION FACILITY



## ENVIRONMENTAL DRIVERS



The AD system will produce RNG, which is cleaner and more beneficial than traditional CNG on a lifecycle analysis as it is produced locally by your organic waste.



The project produces fertilizer that can be utilized by residents, commercial customers, farmers, city parks and golf courses.



AD is the only local option for co-collected green and food waste recycling.



While composting is superior to landfilling, it is inferior to anaerobic digestion, as it does not capture the energy or emissions being released during the process.



Improves air quality and energy independence.

## ECONOMIC DRIVERS



The cities that sign up first will secure their position in the system as well as take advantage of the many grants received, which lowers the initial rate per ton.



The utilization of this project will provide the city with a sustainable disposal option, which will provide many environmental benefits as well as long term pricing stability.



Our fuel costs will be relatively constant, reducing fuel cost exposure in the future.



The only way to provide your city with a combined green and food waste program for residents using the same collection routes and containers that are already in place.

## REGULATORY DRIVERS



AB 32: California Global Warming Solutions Act. The project will benefit the city in its efforts to meet the green house gas reduction requirements. One of the most cost-effective ways to ensure compliance.



AB 341: Mandatory commercial recycling and a 75% statewide diversion goal by 2020.



AQMD and CARB air quality regulations will be satisfied.

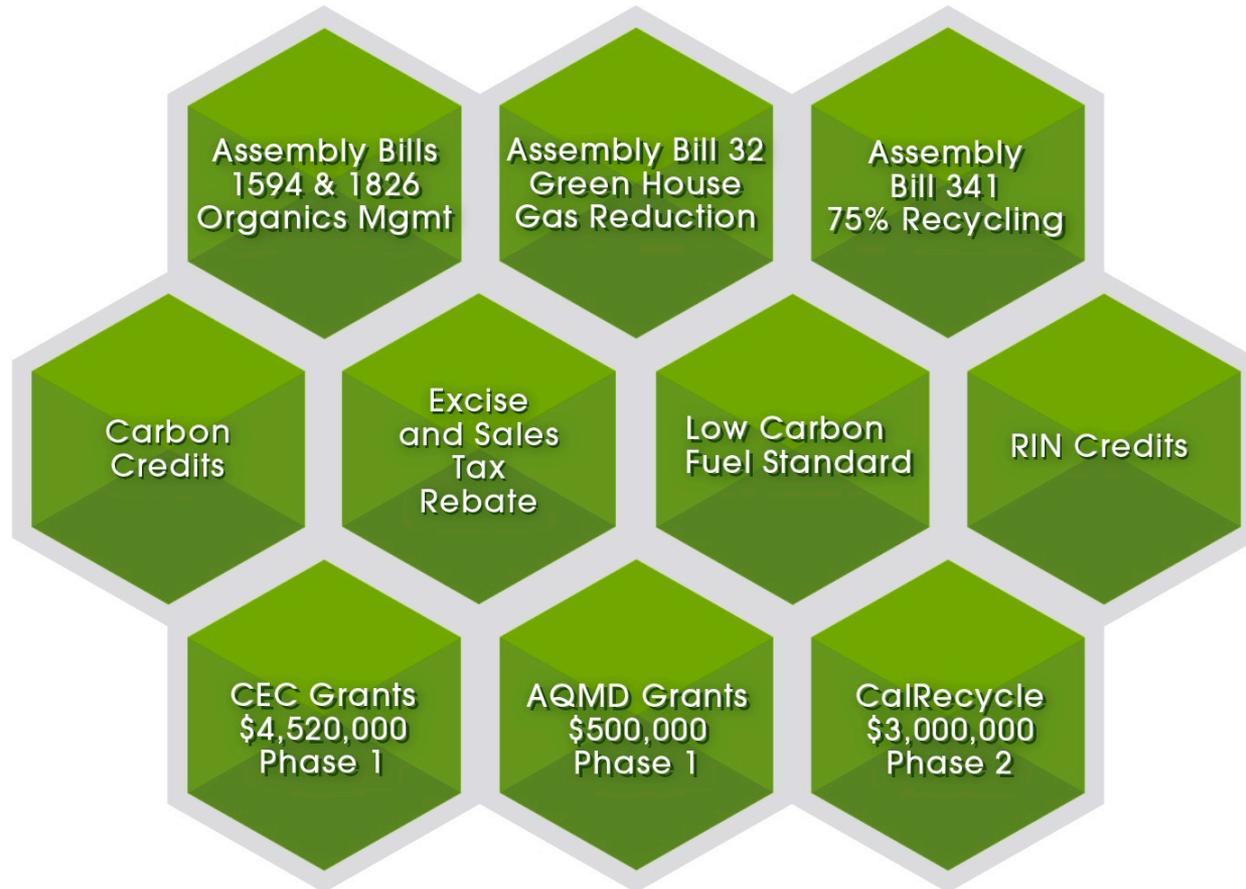


AB 1826: The city will be able to comply with the organic materials phase out from landfills.



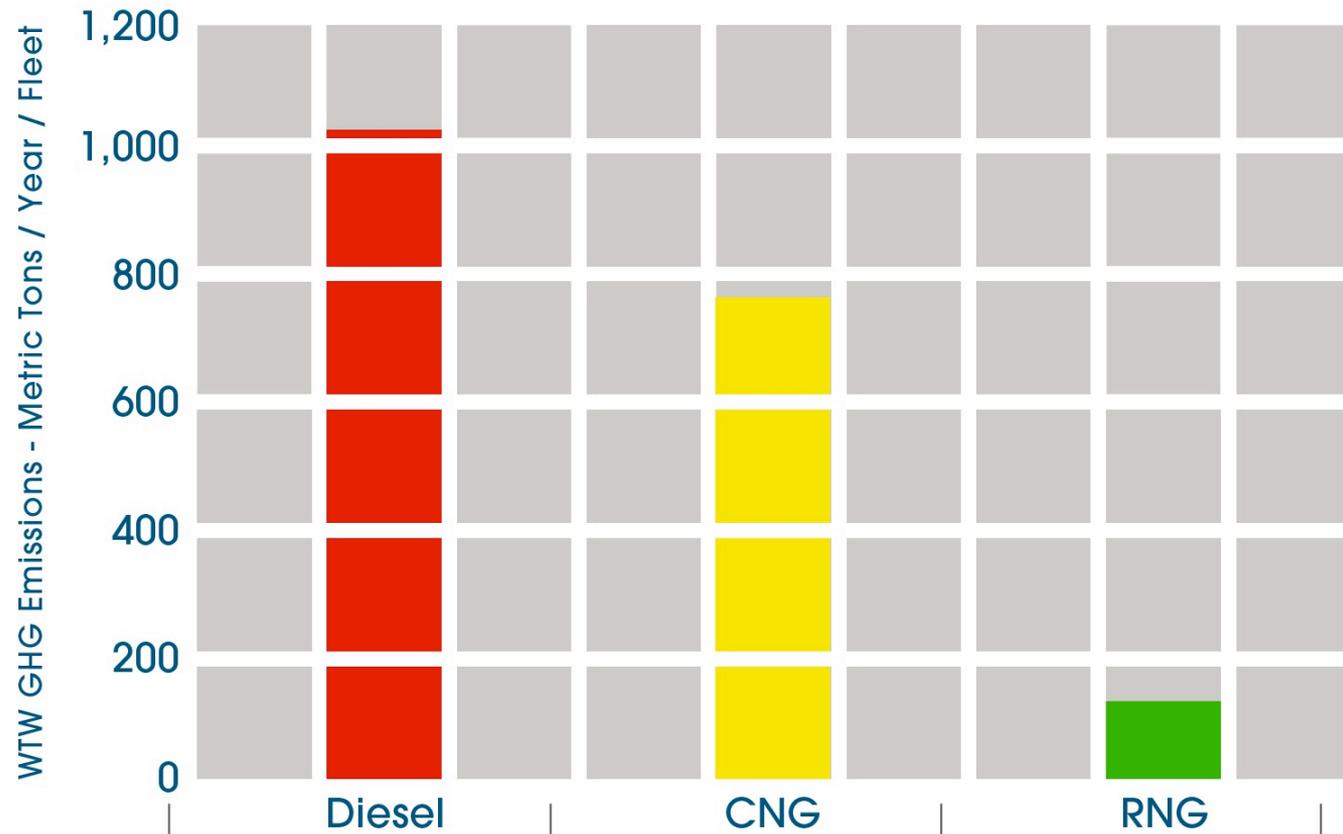
AB 1594: Green Waste (ADC - Alternative Daily Cover) is also currently being phased out by the year 2020.

## FINANCIAL INCENTIVES

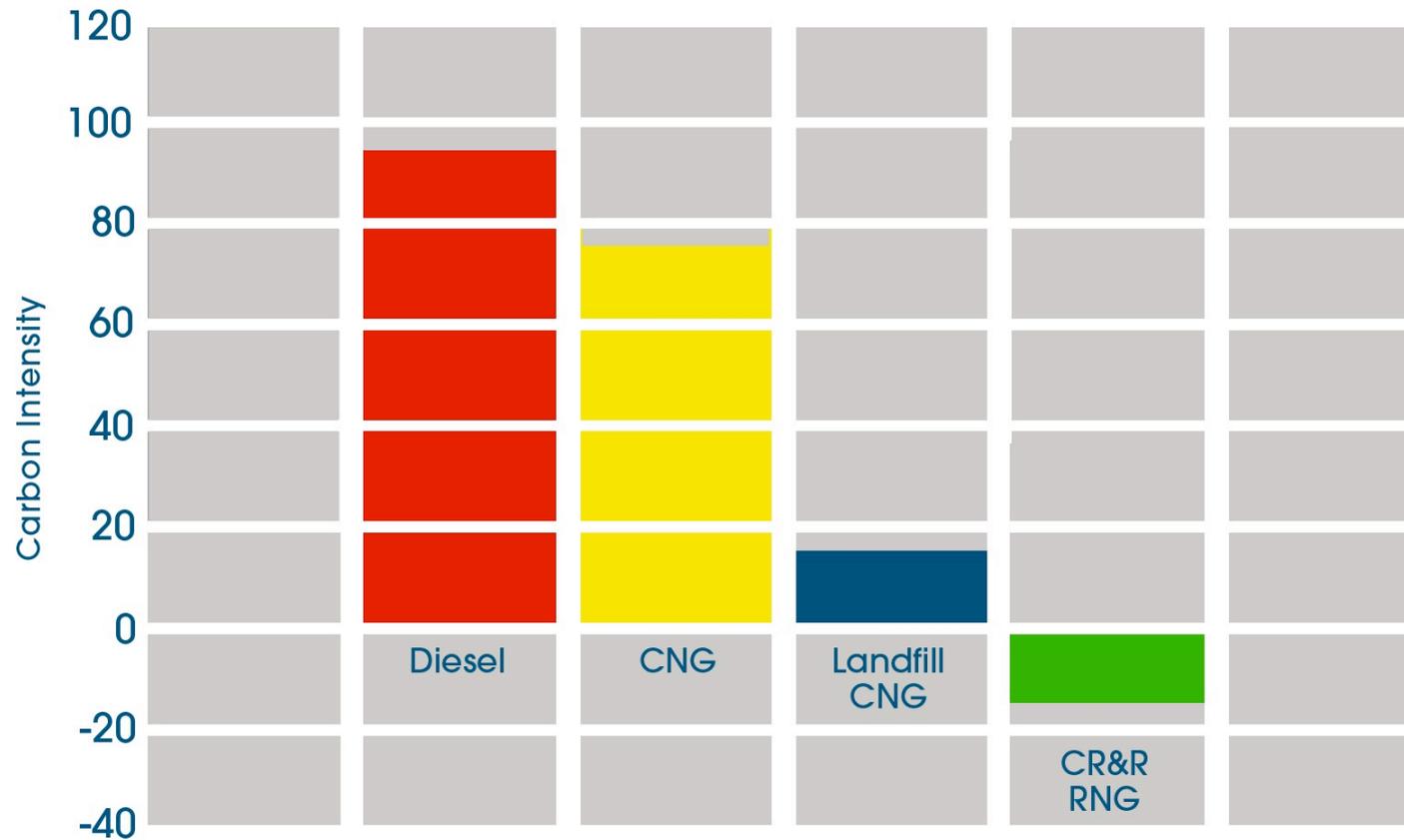


# Greenhouse Gas Emissions Analysis

10 Vehicle Fleet GHG emissions from Source to use as Truck Fuel (Well to Wheels WTW)



# CARBON INTENSITY



\* Amount of carbon emitted per unit of energy consumed (California Air Resources Board)

## ORGANICS MANAGEMENT OVERVIEW

### LANDFILLING

**75%**  
Energy Recovery

**75%**  
Emissions Capture

**0%**  
Nutrient Recovery

### COMPOSTING

**0%**  
Energy Recovery

**0%**  
Emissions Capture

**100%**  
Nutrient Recovery

### ANAEROBIC DIGESTION

**100%**  
Energy Recovery

**100%**  
Emissions Capture

**100%**  
Nutrient Recovery

## PROJECT SUMMARY



- 100% Emissions, Energy and Nutrient Capture
- All Systems Are Fully-Automated and Continuous 24/7
- “Real Time” Optimization - Temperature, Moisture, Methane, etc.
- Feedstock Can Be Liquids or Solids
- Highest Conversion to RNG Available
- No Loading, Unloading or Human Entry
- Over 90+ Plants in Operation Worldwide
- Can Operate Both Mesophilic and Thermophilic Simultaneously
- Very Small Footprint
- Octaform and Self Consolidating Concrete (SCC)





















environmental services

the face of a greener generation 

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*The Most Cost Effective, Environmentally Intelligent,  
and Sustainable Organics Management System.*

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Thank you for your time  
and interest  
in our project.