



## Biogas Project Profile

# Waste Management-LA County Sanitation District's Food Scrap-Wastewater Biogas System Orange, CA (centralized organics pre-processing) and Carson, CA (digestion & biogas system)

**Owner:** Waste Management and Los Angeles County Sanitation District

**Developer:** Waste Management and Los Angeles County Sanitation District

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**Project Summary:** This operating public-private partnership successfully demonstrates the full-scale co-digestion of urban residential and commercial source separated organics (SSO) at an existing municipal wastewater digester in a way that can be replicated at other water utilities.



*The EBS™ Feed-In Station at Carson WRRF*

First, in Orange, CA, Waste Management (WM) pre-processes the SSO into an Engineered Bioslurry (EBS™) product through its patented CORE® process located at its materials recovery facility and transfer station. There, the CORE® process removes physical contaminants and creates a homogenous, high quality EBS™. The EBS™ is then transported by special tanker trailers to Los Angeles County Sanitation District's (LACSD's) 300 million gallon per day Joint Water Pollution Control Plant (JWPCP) located in Carson, CA. At the specially constructed feed-in station, the EBS™ is stored and metered into one of the Plant's existing digesters for co-digestion with municipal sludge. The resultant biogas is used to generate electricity and heat at JWPCP's 20 MW CHP facility.

The project has run continuously without interruption since operations began in February, 2014. As part of the collaboration, LACSD and WM have been executing on an extensive research plan to determine the impacts and benefits of co-digestion using processed urban organics. Interim results were reported in a paper presented at the Water Environment Federation's WEFTEC Conference in October, 2015. All results to date clearly indicate a major increase in biogas production with no adverse impacts to the digestion process.

This project represents one of the largest co-digestion projects of its kind in the US, processing approximately 65-85 tons per day (TPD) of urban residential and commercial SSO and co-digesting the resultant EBS™ product with sludge at an existing municipal digester.

### What makes this project special?

This is an exemplary and creative public-private partnership from many perspectives. It is one of the largest projects of its kind in the US converting urban organics into renewable energy using existing municipal infrastructure, and a model for many to learn from.

**Organizations involved:** *Waste Management (WM)\*, Los Angeles County Sanitation Districts (LACSD)*

*\*ABC Member*

Inputs and Outputs	
Feedstocks:	Primary and Secondary Wastewater Biosolids Urban residential & commercial food waste Expired produce and prepackaged food products Out of spec and expired beverages All input materials (up to 85 TPD) are processed through WM's CORE® facility to remove physical contaminants, blend feedstocks and to create a consistent, quality EBS™.
Products created:	500 kW electricity, digestate, heat
Digestate management:	Digestate is dewatered using centrifuges to ~29% total solids. The resultant cake is managed through a diversified program comprised of 90% beneficial use (direct land application and composting) and landfill daily cover (10%).
Biogas generation:	As of August, 2016, the project is generating an additional ~180 MMBTU per day of energy which is used to supplement existing digester biogas used to power LACSD's combined cycle turbine power generation facility. This facility generates about 20 MW of power for on site uses, including electricity and heat for the digesters.

Finances, Beneficiaries, and Expansion	
Project financing:	Self-financed by Waste Management
Customer(s):	JWPCP uses the energy to offset purchased natural gas & electricity from local utilities in order to run the 300 MGD wastewater treatment plant. JWPCP is effectively energy neutral on an annualized basis.
Long term plans?	WM and LACSD are considering expanding SSO co-digestion at the JWPCP to 500 TPD of input feedstock. This would have a significant positive impact on the diversion of organic waste and the production of renewable energy in Los Angeles County. Options being considered for excess biogas include upgrading it for pipeline injection and/or for vehicle fuel. This system may also be applied in New York City and Boston.

### Photos:



1. Commercial SSO at WM's Orange County CORE®; 2. EBS™ manufactured by WM's CORE® Process; 3. EBS™ Storage & Blending Tanks at WM's CORE®