

## Project Descriptions

The following descriptions provide highlights of some of the projects being presented at the Digesting Urban Residuals Forum, May 30, 2012.

For more information and project updates, visit the Cal Recycle website at [www.calrecycle.ca.gov](http://www.calrecycle.ca.gov), or contact Jacques Franco at [jacques.franco@calrecycle.ca.gov](mailto:jacques.franco@calrecycle.ca.gov)

### East Municipal Utility District Food Waste Digestion

<b>Project Contact:</b>	Donald Gray, <a href="mailto:dgabb@ebmud.com">dgabb@ebmud.com</a>
<b>Location:</b>	Oakland, CA
<b>Location type:</b>	Publicly-owned wastewater treatment plant
<b>Feedstock/source:</b>	Pre or post consumer food waste
<b>Facility Throughput:</b>	Currently about 20 tons-per-day (tpd)
<b>Technology Details:</b>	EBMUD patented process
<b>Product(s)/capacity:</b>	Biomethane for fueling engine-driven generators, and biosolids for land application or alternative daily cover
<b>Tip Fees and Financing:</b>	Tip fees are from \$40-60/ton delivered
<b>Development Status:</b>	Operational

## Tajiguas Resource Recovery Project Santa Barbara

<b>Project Contact:</b>	Carlyle Johnston, (805) 882-3617, <a href="mailto:CJohnst@cosbpw.net">CJohnst@cosbpw.net</a>
<b>Location:</b>	Santa Barbara County
<b>Location type:</b>	At existing Tajiguas Landfill
<b>Feedstock/source:</b>	Mixed municipal solid waste (MSW); Optionally source separated commingled recyclables and source separated organics
<b>Facility Throughput:</b>	Maximum MSW materials recovery facility (MRF) Capacity of 250,000 tons-per-year (TPY) or 800 tons-per-day (TPD); Maximum source separated commingled recyclables capacity of 40,000 TPY or 130 TPD, Maximum anaerobic digestion (AD) organic waste processing capacity of 73,600 TPY or 202 TPD
<b>Technology Details:</b>	Dry Fermentation Anaerobic Digestion Facility (mesophilic); AD technology provider: BEKON, Germany; MRF equipment provider Van Dyk Baler/Bollegraaf
<b>Product(s)/capacity:</b>	1+ (net) of MW electricity/year, excess heat, ~25,000 tons of compost/year, recyclables, and a 60+% MSW diversion rate
<b>Tip Fees and Financing:</b>	Tip fees for tons delivered
<b>Development Status:</b>	Planning/Permitting, Notice of Preparation of EIR to be issued in April 2012; Estimated Construction Start Date 2014.
<b>Other:</b>	County & 4 cities forming a Joint Powers Authority to administer project. Design, Build, Own, Operate & Transfer structure with private vendor/developer: Mustang Renewable Power Ventures.

## Zero Waste Energy Development Company Anaerobic Digestion Facility

**Project Contact:** Name | Emily Hanson  
Title | Project Manager  
Phone | 408-938-8754  
Email | ehanson@greenwaste.com

**Location:** San Jose, CA

**Location type:** This facility will be built in three phases and will operate as a stand-alone facility. The facility is being built on a closed landfill and will be permitted as an anaerobic digestion/compost facility with coverage to operate as a MRF/Transfer Station. The site is located across the street from the San Jose/Santa Clara Wastewater Treatment Plant and is adjacent to two outdoor resource recovery operations owned/operated by one of our member companies, Zanker Road Resource Management.

**Type of feedstock and source:** Pre- and post-consumer source separated food waste, MRF residuals from processing wet and dry materials and greenwaste.

**Facility Throughput:** Each of the three phases will process up to 90,000 tons-per-year (tpy), up to 250 tons-per-day (tpd). At full build-out, the facility will process up to 270,000 tons-per-year (tpy), and 750 tons-per-day (tpd)

**Technology Details:** *Eggersmann Anlagenbau's* patented *Kompoferm* high solids dry anaerobic digestion and *IVC Plus* in-vessel composting technologies, exclusively licensed to and provided by Zero Waste Energy, LLC

**Product(s) and expected capacity:** Each of the three phases will produce 1) Heat (6.28 MMBtu-per-hour or 150MMbtu-per day); 2) Power (gross electrical generating capacity of 1,600 kW or 13,363,497 kWh-per-year); and 3) Finish Compost (30,000 tons per year).

**Tip Fees and Financing:** Depending on the level of contamination, the 2012 tip fees for the City of San Jose under the exclusive Organics Processing Agreement range from approximately \$71 – 94. Financing is being obtained through the California Pollution Control Financing Authority.

**Development Status:** California Environmental Quality Act (CEQA) clearance has been obtained. A Special Use Permit has been issued. The Public Improvement Plan has been submitted and is in its second round of review. The Grading & Drainage Plan has been submitted and is in its third round of review. The Building Planset has been submitted and is currently undergoing expedited review. The groundbreaking for the site development is being planned for June 2012.

# Inland Empire Utilities Agency Food Waste AD Project Description

**Project Contact:** John McNamara

**Location:** Chino, CA

## **Description:**

Environ Strategy Consultants, Inc. (Environ Strategy) has entered into a lease agreement with the Inland Empire Utilities Agency (IEUA) to utilize the existing digester facilities at the Regional Plant 5 Solids Handling Facility (RP-5 SHF). The RP-5 SHF that was originally intended to treat dairy manure and some food waste to provide clean, renewable source of methane gas (biogas) as a substitute for natural gas fuel for use in the existing power energy generation facilities at the IEUA.

The site is comprised of 10 acres of land at the IEUA RP-5 facility located in Chino California. The facility consists of an already permitted and built food waste AD system that includes a in ground scale, solid waste receiving building, liquid waste receiving tanks, two 1 million gallon above ground AD tanks, biogas flare, and biogas boilers. Environ Strategy initiated LFW operations at the IBEAD in August of 2011 with the existing regulatory approvals.

This project includes the liquid food waste phase operation and will add solid food waste (SFW) as a feedstock to the system. The solid food waste will be derived from third party sources in the Inland Empire area and surrounding areas similar to the existing operations. The solid waste materials will be unloaded to the eastern portion of the facility process building, where a food waste processing unit is installed.

Biogas generated from the digester during this operation will be used to create renewable electricity in the two (2) existing biogas engines located at the RP-5 facility. The renewable electricity will be generated by burning the biogas in the two engines each of which can generate up to 1.5 MW electricity for a total of 3MW. In addition Environ Strategy will evaluate the possibility of making compressed natural gas (CNG) that will in turn be used by solid waste hauling companies with CNG powered collection vehicles.

## Dufferin Organic Processing Facility, Toronto Canada

<b>Project Contact</b>	Brian Van Opstal Manager Solid Waste Management Services City of Toronto, Ontario Tel: (416) 397-0143 Email: <a href="mailto:bvanops@toronto.ca">bvanops@toronto.ca</a>
<b>Location</b>	Within Toronto City Limit (35 Vanley Crescent, Toronto, Ontario, Canada)
<b>Location Type</b>	Next to 'clean' MRF
<b>Type of Feedstock and</b>	
<b>Facility Throughput per year [per day]</b>	- 25,000 tonnes (design) [100 tonnes] - 40,000 tonnes (2011) [160 tonnes] - 55,000 tonnes after 2 <sup>nd</sup> Phase Expansion [220 tonnes]
<b>Technology Process Details</b>	- BTA Process, "wet" (low solids) Pre- treatment & AD Process - Complete mixed AD (w/digester gas) - Single stage - Mesophilic - Intermittent feeding (weekdays only) (continuous feeding [24/7] after expansion)
<b>Product(s) and Expected Capacity (Dufferin: 2011 figures) Disco: projection)</b>	- high-quality digestate (15,450 tonnes/yr) for off-site composting or fertilizer production - Biogas: 4 million Nm <sup>3</sup> /yr (biogas to be upgraded to biomethane for pipeline and transportation fuel) Residuals: 9,000 tonnes/yr]
<b>Tip Fees, SSO Collection &amp; Processing, and Financing</b>	Processing Fees: not reported see note SSO Collection with City-owned and operated vehicles City-owned; contractor (CCI-TBN) operated  Capital Cost: CAN\$15 million (use of existing building & infrastructure)  Facility upgrades - CAN\$ 11million (Phase 1: 2 <sup>nd</sup> digester, 1 <sup>st</sup> digester repair, new biofilter)
<b>Development Status</b>	In operation since 2002; Phase 1 Completion of Plant Expansion: Spring 2012

## New Disco Road Organic Processing Facility, Toronto Canada

<b>Project Contact</b>	Joerg Blischke Project Engineer AECOM Water Markham, Ontario Tel: (905) 747-7821 Email: <a href="mailto:Joerg.Blischke@aecom.com">Joerg.Blischke@aecom.com</a>
<b>Location</b>	Within Toronto City Limit (120 Disco Road, Toronto, Ontario, Canada)
<b>Location Type</b>	Next to Transfer Station on Old Landfill Site
<b>Type of Feedstock and</b>	
<b>Facility Throughput per year [per day]</b>	55,000 tonnes (base design) [220 tonnes] 75,000 tonnes (maximum design) [300 tonnes]
<b>Technology Process Details</b>	<ul style="list-style-type: none"> <li>- BTA Process, "wet" (low solids) Pre-treatment &amp; AD Process</li> <li>- Complete AD (w/digester gas)</li> <li>- Single stage</li> <li>- Mesophilic</li> <li>- Continuous feeding (24/7)</li> </ul>
<b>Product(s) and Expected Capacity (Dufferin: 2011 figures) Disco: projection)</b>	<ul style="list-style-type: none"> <li>- high-quality digestate (28,000 tonnes/yr) for off-site composting or fertilizer production</li> <li>- Biogas: 8.7 million Nm<sup>3</sup>/yr (biogas to be upgraded to biomethane for pipeline and transportation fuel)</li> <li>Residuals: 16,500 tonnes/yr</li> </ul>
<b>Tip Fees, SSO Collection &amp; Processing, and Financing</b>	<p>Processing Fee: not available</p> <p>SSO Collection with City-owned and operated vehicles</p> <p>City-owned; contractor (Veolia w/CCI-TBN) operated (Design-Build-Operate team lead by AECOM Canada)</p> <p>Capital Cost: CAN\$ 77.5 million (site preparation - CAN\$14 million; CAN\$59 million for Facility; CAN\$4.5 million Contingency)</p>