Conversion Technology E-Newsletter - January 2016
01/14/2016

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
January 21, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

VerdeXchange Conference
January 24 - 26, 2016
Los Angeles, CA
For more information on this event, please visit the website:
http://www.verdexchange.org/

Global Waste Management Symposium
January 31 February 3, 2016
Palm Springs, CA
For more information on this event, please visit the website:
http://www.wastesymposium.com/ws16/public/enter.aspx

BioCycle West Coast Conference
April 4 7, 2016
San Diego, CA
For more information on this event, please visit the website:
http://biocyclewestcoast.com/

SWANA 45th Annual Western Regional Symposium and Trade Show
April 11 14, 2016
San Luis Obispo, CA
For more information on this event, please visit the website:
http://www.socalswana.org/western.html

NEWS

Seven Reasons Why Waste Conversion Technologys Promise Is Unfulfilled
Waste conversion technology holds promise, but zero waste to landfill is far off. After a

decade-long effort and billions of dollars of expenditure, waste conversion technologies (CTs) have yet to fulfill their promise in addressing one of North Americas primary environmental goalsreducing the 125 million tons of post-recycled MSW that come to rest in our nations landfills each year. There are several barriers to CTs, including regulatory uncertainty, price instability, and feedstock supply. To read more, click here.

Annapolis Firm Aims to Turn Florida County's Yard Waste Into Electricity Energy3, the yard waste hauler for Monroe County, Florida, is trying to establish a long-term contract that would send the region's yard waste to a proposed waste-to-energy gasification facility in Florida. Currently, the yard waste is being turned into mulch and sold in home and garden stores throughout southern Florida. Energy3 would finance the gasification facility, which would have to be online within 30 months. To read more, click here.

Santa Rosa Expands the Ability to Treat Grease, Food Waste at Sewer Plant In Santa Rosa, California, four 10,000 gallon tanks were installed at the citys Llano Road wastewater treatment plant. These tanks, which will go into operation in April, will contain high-strength wastes, such as fats, oils, grease, food waste, and slaughterhouse residue. The waste will be treated and turned into biogas to keep the plants power costs down. The plants four 1 million-gallon digesters have about 20 percent excess capacity to treat the high-strength waste. It is estimated that at full operation of 40,000 gallons per day, the plant could see biogas production increase 50 to 100 percent. To read more, click here.

Making Energy from Waste: The Other Natural Gas Food scraps are being collected from restaurant, grocery stores and large food manufacturers in Colorado. In a few weeks, the collected waste will be shipped to northern Colorado, where the Heartland Biogas facility is in its final stages of construction. There could be 25 to 30 semi loads of food waste coming in per day, which is then mixed with manure from a local dairy farm. After the facility extracts the RNG from the waste, its injected into a pipeline along with fossil natural gas, feeding a nationwide delivery system. To read more, click here.

Business Diverts 6M Pounds of Waste from Landfills Arrowaste, a waste removal business in Michigan, said it has redirected 6 million pounds of food waste from landfills to composting facilities this year. Arrowaste began offering the composting option to commercial businesses through its separate New Soil division due to growing client demand, particularly from food service clients. New Soil picks up any food waste from businesses for transportation to compost facilities. To read more, click here.

Conversion Technology E-Newsletter - February 2016
02/11/2016

ANNOUNCEMENTS

As part of the California Greenhouse Gas Reduction Fund Auction Proceeds Budget Appropriations, the Governors proposed budget for Fiscal Year (FY) 2016-17 would allocate $100 million in greenhouse gas reduction funds to CalRecycle. CalRecycle anticipates releasing the notices of funding availability for these programs in Fall 2016. Funding of these programs will be contingent upon passage of the FY 2016-17 budget. In addition, approximately $5 million in loan funds is still available for FY 2015-16 and accepting on-going applications.

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
February 18, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

Advanced Bioeconomy Leadership Conference
February 17 19, 2016
Washington, D.C.
For more information on this event, please visit the website:
http://advancedbiofuelssummit.com/

Zero Waste Symposium 2016
February 23, 2016
San Diego, CA
http://zerowastesandiego.org/events/

GreenBiz 2016
February 23 25, 2016
Phoenix, CA
http://www.greenbiz.com/events/greenbiz-forum/phoenix/2016

BioCycle West Coast Conference
April 4 7, 2016
San Diego, CA
For more information on this event, please visit the website:
http://biocyclewestcoast.com/

NEWS

Wilsonville Facility Would Turn Food Scraps To Energy

The Portland area could get its first digester, which would convert banana peels, coffee grounds, and other food waste into renewable energy. Approximately 18 percent of the Portland areas garbage sent to landfills is food scraps. The bulk of those food scraps come from commercial, rather than residential, kitchens. An anaerobic food digester proposed in Wilsonville would be designed to process 50,000 to 70,000 tons of commercial food waste per year. In total, the facility would produce 2.4 megawatts of electricity per hour, 24 hours per day. If approved, construction on the project could begin in December 2016, clearing the way for it to open in 2018. To read more, click here.

Blume Distillation, Aufrecht Technologies to Partner on Waste-to-Liquid Replacement Fuel Solutions

Blume Distillation, LLC, announced the completion of a Strategic Development Agreement (SDA) with Aufrecht Technologies, an energy analysis and renewable energy system integration service provider. Blume Distillation is a provider of biorefinery solutions that convert food waste and purpose grown crops into liquid replacement fuel and high-value alcohol end and co-products. The agreement enables Blume Distillations technology, consultation and solution implementation services to be incorporated into Aufrechts alternative energy reseller network. Blume turnkey produce capacities ranging from 500,000 to 10MM gallons of alcohol-based product per year. Aufrecht is focused on developing a network of more than 2,500 resellers worldwide by 2020. To read more, click here.

Recycling Food Scraps Into Energy? It's About to Start Becoming Routine in Orange County

Six months ago, the Costa Mesa Sanitary District launched the first municipal organics recycling program in Southern California. Two-thirds of the city's single-family households have begun saving and separating their leftovers since the program begin in late June 2015. So far, the districts program has prevented more than 7 million pounds of food waste and yard clippings from going to landfills, sending it instead to a compost pile in Victorville. Beginning next month, that organic material will be trucked to a new anaerobic digester a $25 million facility in Perris owned by CR&R Waste and Recycling Services. CR&R collects residents trash in 14 Orange County cities, and the organics recycling service costs households an extra $1.30-$5 per month. To read more, click here.

Seattle Tech Geeks Grow Food-to-Fertilizer Concept

WISEerg, a firm based in Washington, has developed a product called the Harvester. It converts food waste into organic fertilizer and uses smart technology to track whats being thrown out to help grocers manage waste and create alternative donation or re-use solutions. The Harvester uses a non-chemical, oxidative conversion technology to grind up food and convert it into a liquid. The firm collects the liquid from each store, processes it at another plant, and distributes the high-end fertilizer that is generated. Each machine can produce 300 to 400 pounds of waste. The firms first full-scale production plant, under construction in Seattle, will convert three million pounds of liquid waste material into fertilizer, and the firm has plans to build four plants in California and two in Portland. To read more, click here.

Conversion Technology E-Newsletter - March 2016
03/14/2016

ANNOUNCEMENTS

Special Announcement

MSW Management Magazine recently published an article titled, "Can CTs truly make a difference in GHG reduction?" The article pertains to the County of Los Angeles Department of Public Works commissioned study, **Comparative Greenhouse Gas Emissions Analysis of Alternative Scenarios for Waste Treatment and/or Disposal**.

The Comparative Analysis shows that an Integrated Materials Recovery Facility (MRF) with Conversion Technologies will achieve a significant net reduction in cumulative greenhouse gas emissions as compared to landfilling post-recycled residuals from a mixed-waste MRF.

To view the Briefing Report of the Comparative Analysis, click here (1.7MB, PDF). To view the full report, click here (4.2MB, PDF) and to view the full report with appendices, click here (12.0MB, PDF).

Sanitation Districts of Los Angeles County Receives Honor

The Superior Achievement for Excellence in Environmental Engineering and Science Award for Operations/Management is presented by the American Academy of Environmental Engineers & Scientists to the overall best entry for federal, state, or local pollution control or other environmental facilities, prevention programs, or environmental regulatory programs. The Sanitation Districts of Los Angeles County recently received this award for its project, developed in partnership with Waste Management, in which source separated food waste is collected, processed, and delivered to the Districts digester in Carson, CA to capture the methane produced and generate electricity.

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
March 17, 2016
Alhambra, CA

For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

Southern California Waste Management Forum Spring Conference
March 23, 2016
Downey, CA
For more information on this event, please visit the website:
http://www.scwmf.org/web/home/

BioCycle West Coast Conference
April 4 7, 2016
San Diego, CA
For more information on this event, please visit the website:
http://biocyclewestcoast.com/

Green California Summit and Exposition
April 7-8, 2016
Sacramento, CA
For more information on this event, please visit the website:
http://www.green-technology.org/gcsummit/

45th Annual Western Regional Symposium and Trade Show
April 11 14, 2016
San Luis Obispo, CA
For more information on this event, please visit the website:
http://www.socalswana.org/western.html

NEWS

$11M USDA Loan Guarantee for 4 Day Organic Waste Digestion Tech
Novus Energy has secured an $11 million federal loan guarantee from the United States Department of Agriculture (USDA) to help it build a new biorefinery plant in Boardman, Oregon. Novus plans to break ground for the plant in 2016 and get production under way next year. The $22 million five-acre plant will apply bio-catalytic conversion to convert non-food organic materials into renewable natural gas and organic fertilizer. Novus CEO says that the technology produces gas in 4 days and converts 90% of the organics. The Novus Pacific facility is expected to process up to 750 tons per day of non-food organic waste, producing up to 3.8 million cubic feet of renewable natural gas per day, 350 gallons of liquid fertilizer daily and 11 tons per day of soil amendment. To read more, click here.

HTDC Unveils New $6.8 Million Waste-to-Energy System
Hawaiis High Technology Development Corp has sponsored a demonstration of a $6.8 million Air Force investment in a renewable and clean, waste to energy generating

system. The waste-to-energy project demonstration will show how 10 tons of waste per day can be converted to electricity through gasification technology. The system was installed at the end of last year and finished initial testing this month. After more testing, the system will be used to produce a liquid jet fuel from waste. The Air Force plans to include a gasifier in the first-phase of a micro-grid project by the end of this year. The demonstration runs through this summer at Joint Base Pearl Harbor-Hickham. To read more, click here.

Renewable Energy: Power On Demand Systems (RE: PODS) Wants to Produce Cleaner Portable Gasification System

RE:POD Systems has developed a portable system that converts carbon-based waste into synthetic gas to power a generator. This gasification unit can accept a wide variety of waste products, from cardboard and switchgrass to manure, and lightly sorted municipal solid waste. The byproduct is a black substance called biochar, a charcoal that can be used as a soil conditioner or in a filtration system for water. RE:POD held a demonstration at Oklahoma State Universitys Biobased Products and Energy Center, but this system is still a prototype and hasn't yet gone into commercial production. The company estimates the price of a commercial RE:POD unit to be from $325,000 to $499,000. To read more, click here.

Suburbs Embrace Food Scrap Recycling to Cut 15 Percent of Landfill Waste

Starting in May 2017, food scrap collection programs will become mandatory in the city of Highwood, located in Lake County, Illinois. People collect food scraps and mix the scraps with yard waste that they put out on the curb to be collected along with garbage and other recyclables. The scraps and yard waste are taken to a recycling facility, where the materials are placed in long rows and regularly turned to promote decomposition. Lake County currently has an overall recycling rate of 48 percent and a goal of diverting 60 percent of waste from landfills by 2020. To help reach its recycling goal, the Solid Waste Agency of Lake County is focusing on the food scraps that account for nearly 15 percent of material dumped in landfills across the country. To read more, click here.

Conversion Technology E-Newsletter - April 2016
04/19/2016

ANNOUNCEMENTS

Cleantech Entrepreneurs: Final weeks to register for 4C Seed to Scale 2016
Transportation, energy, built environment, and water entrepreneurs can find their path to the marketplace with help from Cleantech Open, LACI, SVCI and Prospect Silicon Valley. The application deadline is May 1, 2016. Visit 4c.laci.org and apply now!

California Air Resources Board Releases Short-Lived Climate Pollutant Reduction Strategy
On April 11, 2016, the California Air Resources Board (ARB) released for public review the Proposed Short-Lived Climate Pollutant Reduction Strategy (Proposed Strategy) and the Draft Environmental Analysis (EA) prepared for the Proposed Strategy. ARB will conduct a public workshop to discuss the Proposed Strategy on April 26, 2016 and a Public Board Meeting to consider the Proposed Strategy on May 19, 2016. ARB invites comments on the Proposed Strategy and Draft EA during the public comment period, which ends on May 26, 2016. For more information, click here.

California Air Resources Board Releases GHG Quantification Methodology for CalRecycle Funding
On April 7, 2016, the California Air Resources Board (ARB) posted a draft quantification methodology (QM) and calculator for assessing Fiscal Year 2015-16 applications for CalRecycle's Greenhouse Gas Reduction Fund (GGRF). In addition, ARB has posted a supplemental workbook with additional information on how the emission reduction factors used in the draft calculator were developed. ARB is accepting public comments on the draft QM, draft calculator and supplemental workbook until April 22, 2016. To view these documents, click here**.**

EVENTS

Pat Brown Institute for Public Affairs 35th Annual Dinner:
Leadership and Innovation in the Face of Climate Change
April 21, 2016
Los Angeles, CA
http://www.patbrowninstitute.org/pbi-events/35th-annual-dinner/

Alternative Technology Advisory Subcommittee Meeting (ATAS)
April 21, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

9th Making Cities Livable Conference
June 27 - 28, 2016
Melbourne, Austrailia
http://healthycities.com.au/

Rethink Methane Symposium
June 29 - 30, 2016
Sacramento, CA
http://rethinkmethane.org/

California Resource Recovery Association (CRRA) 40th Annual Conference & Tradeshow
August 7 - 10, 2016
Sacramento, CA
http://www.crra.com/crra-2016

NEWS

Waste-to-Energy Machine Reveals Power of Trash
The trash from Fort Benning in Georgia is helping the Army test the Battalion-scale Waste to Energy Conversion Green Energy Machine (BWEC GEM), which came to Fort Benning as the result of a partnership with Infoscitex and MSW Power. The BWEC GEM is a waste to energy system that has three major units: a preprocess that converts the trash into a pellet, a thermal gasification process to break down the solid fuel pellet into a flammable gas, and an engine which uses the gas as fuel to produce electricity. The BWEC GEM was designed to process three tons of trash daily. Once processed, that trash becomes 100 gross kilowatts. Out of those 100 gross kilowatts, the BWEC GEM needs 26 to operate leaving 74 net kilowatts for Fort Benning to use. To read more, click here.

Company Wants to Turn Trash into Treasure
Renewable energy company Sierra Energy announced that it will try to start turning landfills in two Wyoming counties into energy sources using an advanced molecular recycling process. The companys FastOx gasification process powers homes and fuels cars with trash. Auctions opened Wednesday for the exclusive rights to develop and distribute FastOx gasifiers in Laramie and Albany counties. Wyoming could build a 6.5 foot wall around the state from the trash generated by its residents, and most of the trash

comes from these two high-population counties, making them the best areas in the state in which to implement the FastOX gasification technology. To read more, click here.

Logan County Commissioners Hear Update on Waste Energy Plant

The Logan County Commissioners heard an update from Creative Energy Systems (CES) on a potential 15MWe Waste Energy Plant to be used by Logan, Morgan and Washington Counties in Colorado. CES will need to build a receiving station at the Logan County Landfill for the project. Trash will be dropped off, packed into containers and CES will bring it to the waste energy plant in Morgan County. The waste will then be converted into electricity through a proprietary version of a process called pyrolysis. CES is looking to have the initial funding for the project by the end of June and start the air permit process. After they get the air permit, it will be an 18-month cycle to build the plant and become operational. They will start receiving trash 12 months in, because they will run it in integration and test mode, to make sure they're producing the power that's needed. To read more, click here.

California Energy Commission Invests $3 million in Biogas Project

The California Energy Commission approved $4.3 million in grants this month for projects to increase the efficiency of natural gas technology used in industrial, agriculture and water processes. Amongst the projects receiving grants was an anaerobic digestion (AD) project in the city of Petaluma. The $3 million grant is for the design, construction and operation of an AD system at the Ellis Water Recycling Facility to produce 150,000 gasoline gallon equivalents (GGE) of renewable natural gas (RNG) made from food and beverage waste. The RNG will be used as a fuel replacement in up to 19 diesel waste hauling trucks, displacing the consumption of approximately 21,200 gallons of diesel annually associated with hauling wastes. Besides the digester, the project will include a biogas purification unit, a compressed natural gas fueling station and waste treatment facility. To read more, click here.

New Zealand-Founded LanzaTech Signs First North American Deal to Convert Waste Gas to Ethanol

LanzaTech has signed a deal giving US biofuels and biochemicals maker Aemetis 12 years of exclusive rights to its patented technology to convert various types of waste gas to ethanol in California. The agreement is based upon meeting certain milestones, with the first step being an eight million gallon per year processing unit planned to be built by the end of next year. Aemetis owns and operates a 60 million gallon per year ethanol plant in Keyes, California that uses around 20 million bushels per year of mainly corn feedstock. By using wastes from forests, dairy, orchards, vineyards, corn, rice, wheat and construction and demolition materials local to its plant, Aemetis hopes to change from paying feedstock costs of more than $150 a ton to receiving tipping fees for waste feedstock. The new technology allows Aemetis to produce advanced ethanol that is worth around $3 per gallon more than traditional ethanol. To read more, click here.

R20 and WRI, a Roadmap to Zero Waste and Sustainable Investing

A major worldwide effort is underway through the non-profit organization R20 Regions of Climate Action to assist sub-national states and jurisdictions in developing projects that promote clean energy and combat climate change. Currently, R20 has more than $1 billion of low-carbon, economic development projects in process in 20 countries. One of R20s key initiatives is to stimulate Zero Waste projects worldwide. These projects use new technologies to convert waste streams, such as municipal solid waste, used tires, and biosolids, into high value products such as liquid fuel, oils, electricity and other valuable outputs. To read more, click here.

Conversion Technology E-Newsletter - May 2016
05/12/2016

ANNOUNCEMENTS

The County of Los Angeles Department of Public Works is pleased to announce that the date has been set for the Southern California Conversion Technology Conference with Tentative Keynote Speaker: Senator Ricardo Lara.

Friday, July 29, 2016, 8:00am - 5:00pm
Alhambra, CA 91803
The goal of this conference is to educate attendees how we can overcome the challenges of developing conversion technologies despite their significant benefits. http://dpw.lacounty.gov/epd/SoCalConversion/PDFS/SaveDateFlyerCTconf.pdf

Air & Waste Management Association West Coast Section is hosting a Luncheon on Municipal Waste, Recycling and Waste-to-Energy

Wednesday May 18, 2016, 12:00pm - 1:00pm
In 2014, the Los Angeles County Board of Supervisors adopted the Roadmap to a Sustainable Waste Management Future (Roadmap), a long term guiding document to phase out reliance on landfills for the disposal of municipal solid waste. Integral to achieving the long term goals of the Roadmap are conversion technologies, which utilize thermal, chemical or biological processes to convert waste into products or fuels without combustion. Coby Skye, Senior Civil Engineer with the Los Angeles County Department of Public Works, will provide a presentation on the County's Roadmap, the state of conversion technologies, and the future of solid waste management in the County.

Location: 21865 Copley Drive, Diamond Bar, CA 91765
Conference Room CC6
Cost: Free
RSVP: e-mail Chhai Chorn at cchorn@aqmd.gov by May 17, 2016

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
May 19, 2016

Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

9th Making Cities Livable Conference
June 27 - 28, 2016
Melbourne, Austrailia
http://healthycities.com.au/

Rethink Methane Symposium
June 29 - 30, 2016
Sacramento, CA
http://rethinkmethane.org/

Southern California Conversion Technology Conversion
July 29, 2016
Alhambra, CA
http://dpw.lacounty.gov/epd/socalconversion

California Resource Recovery Association (CRRA) 39th Annual Conference & Tradeshow
August 7 - 10
Sacramento, CA
http://www.crra.com/annual-conference

Waste Conversion Technology Conference & Trade Show
August 15 - 17, 2016
San Diego, CA
http://wasteconversionconference.com/

NEWS

Conversion and Recycling: Friends or Foes?
Over the past decade, the concern for energy resources has become a significant issue. Given the opposition to waste-to-energy, those favoring the development of alternative practices to accompany recycling efforts have looked at a variety of waste conversion technologies (CTs) to carry them toward the goal of greater diversion rates. The effort has been laborious, painful, and fraught with failure on both the technological and political side, but in the past year progress is being made on both fronts. To read more, click here.

All Good as 140 MW Finnish Waste Gasification Plant Passes 25,000 Hours
Following its first 25,000 hours of operation, Finnish firm Lahti Energia Oy's 140 megawatt (MW) combined heat and power Kymijrvi II waste to energy gasification plant has

achieved its set targets. The waste to energy gasification technology, demonstrated for the first time in the city of Lahti, Finland, helps reduce the consumption of fossil fuels by replacing 140,000 metric tons of coal with renewable fuel every year. The electricity production capacity of the plant for the city is 50 MW and the district heat production capacity is 90 MW. To read more, click here.

3 Questions: Amit Kumar and Gregory Stephanopoulos on Turning Waste Gases into Biofuels

Research conducted by MIT postdoc Amit Kumar, along with a team led by Professor Greg Stephanopoulos, looks to the future of emissions reduction and recycling. Their team released a study on utilizing bacteria to turn waste gases into biofuels. The MIT Energy Initiative talked with Kumar and Stephanopoulos to learn more about the research behind the paper, the teams near-term plans to scale up from a pilot plant to a demonstration plant, and their thoughts on future areas of research. To read more, click here.

Quebec Municipality Blazes the Trail with Biogas Plan

A biogas plant in Saint-Hyacinthe, Quebec is nearing completion and will begin operating this fall. The plant will divert residential organic waste and waste from local food processing plants from landfill because, in 2020, the province of Quebec will no longer allow organic waste to go to landfill. The $85 million plant was funded by the municipality, the province, and the Canadian federal government . The plant will feed methane gas to the local natural gas grid to generate revenue. To read more, click here.

Santa Fe Community College, Biofuels Company Partner to Develop Renewable, Energy-Efficient Farming

This summer, Santa Fe Community College and a Colorado-based company, Ecoponex systems, plan to launch a renewable energy efficient farming (micro-REEF) project. The micro-REEF will use renewable energy, leftover food, and fish waste to grow fresh food using less water. Food waste from the college and waste from fish grown in the reef will be turned into biofuel. The biogas, along with solar energy, will be used to power the project. Ecoponex is one of two dozen companies with some financial backing from LACI, a Los Angeles-based clean-tech company that invests in disruptive technologies. To read more, click here.

ZooShare Holds Groundbreaking Ceremony for Toronto Biogas Plant

ZooShare Biogas Cooperative Inc. held a formal groundbreaking ceremony this week to celebrate the start of construction on its 500 kilowatt biogas facility located adjacent to the Toronto Zoo. The plant will use 3,000 tons of zoo manure and 14,000 tons of local food waste from grocery stores to generate renewable power for the Ontario grid, reducing greenhouse gas emissions by the equivalent of 10,000 tons of carbon dioxide each year. The project estimates beginning operations in December 2016 or early next year. To read more, click here.

Project Aims to Trade Diesel with Biomass for Remote Northern Communities
A new forestry project, the Community Sustainability Initiative, has a goal to support the use of bio-energy in Indigenous communities in Ontario, Canada that currently depend on diesel fuel. Whitesand First Nation is planning to build a biomass-fueled electric power and heat co-generation plant. It will use waste from forests to create energy and electricity. The co-generation plant will produce enough power to supply electricity to Whitesand First Nation and the communities of Collins and Armstrong in Ontario. To read more, click here.

Sooke Council Mulls 'Gasification' Proposal
Pivotal IRM, Inc., a British Columbia-based company specializing in renewable waste technology, pitched the idea of gasification to the municipality of Sooke, British Columbia. The technology could provide Sooke with an alternative that will process sewer sludge and possibly solid waste. Currently, the municipality hauls sewer sludge for landfill disposal. Pivotals smallest gasifier would need to process a minimum of 11 metric tons a day (3,600 metric tons a year) of waste to be efficient. To read more click here.

Conversion Technology E-Newsletter - June 2016
06/16/2016

ANNOUNCEMENTS

LOCAL CONVERSION TECHNOLOGY CONFERENCE TO BE HELD JULY 29, 2016, IN ALHAMBRA

To register for the conference, please visit the conference tab at www.socalconversion.org.

The Los Angeles County Department of Public Works is hosting the **Southern California Conversion Technology Conference on Friday, July 29, 2016, from 9:00 a.m. 4:00 p.m. at Los Angeles County Department of Public Works Headquarters located at 900 S. Fremont Ave. in Alhambra, CA**. The goal of the conference is to educate conference attendees, which are expected to be elected officials, representatives of local jurisdictions, members of industry, and environmental groups, on the many benefits of an integrated approach with conversion technologies. We are expecting 300 attendees and see this as an excellent opportunity for stakeholders in the waste management industry to be recognized as sponsors.

The Los Angeles County Department of Public Works continues to pursue the development of conversion technologies to help reduce our dependence on landfill disposal, reduce greenhouse gas emissions, provide new sources of renewable energy, create green jobs, and provide other environmental benefits. Despite the significant benefits of conversion technologies, their development has been slow in California due to a number of challenges including a lack of financial incentives, uncertain legislative and regulatory framework, and misconceptions regarding conversion technologies.
Conference Agenda topics will include:

- Successful implementation and best practices of conversion technologies throughout the world;
- The potential to reduce greenhouse gas emissions with the integrated use of conversion technologies;
- Incorporation of conversation technologies into sustainability initiatives;
- A legislative and regulatory discussion.
- Keynote Speaker: Senator Ricardo Lara.

The sponsorship deadline is: June 30, 2016. If your organization would like to participate in this years event as a sponsor, see more information at www.socalconversion.org and please complete the sponsorship form and return it to the address provided. If you have further questions, please feel free to contact Clark Ajwani at cajwani@dpw.lacounty.gov or by phone at (626) 458-4991.

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
June 16, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

9th Making Cities Livable Conference
June 27 - 28, 2016
Melbourne, Austrailia
http://healthycities.com.au/

Rethink Methane Symposium
June 29 - 30, 2016
Sacramento, CA
http://rethinkmethane.org/

Southern California Conversion Technology Conversion
July 29, 2016
Alhambra, CA
http://dpw.lacounty.gov/epd/socalconversion

California Resource Recovery Association (CRRA) 40th Annual Conference & Tradeshow
August 7 - 10
Sacramento, CA
http://www.crra.com/conference

Waste Conversion Technology Conference & Trade Show
August 15 - 17, 2016
San Diego, CA
http://wasteconversionconference.com/

NEWS

Los Angeles County Net Greenhouse Gas Comparison Study

An analysis of two different waste management scenarios was done comparing their net greenhouse gas (GHG) emissions. The first scenario is the transport and disposal of 1,000 tons per day (tpd) of residuals from a mixed waste materials recovery facility (MRF) to a modern sanitary landfill (Baseline Scenario). The second scenario proposes to process the same residuals at an Integrated MRF with conversion technologies (Alternative Scenario). The Baseline Scenario results in a net increase in approximately 1.62 million metric tons of dioxide equivalent (MTCO2E), while the Alternative Scenario results in net avoided GHG emissions of (0.67) million MTCO2E, showing the positive environmental benefits of the Alternative Scenario. To read more, click here.

Emerging Waste-to-Energy Technologies: Solid Waste Solution or Dead End? Incineration is a dirty word in the United States, at least where trash is involved because of the toxins they emit. Now there are new approaches to converting trash into energy so-called waste-to-energy (WTE) technologies or conversion technologies that promise cleaner emissions and more flexibility in terms of energy output, plus in some cases the virtual elimination of landfilling through a complex two-stage treatment process. WTE facilities have been successful around the world where landfill space is limited in places like Japan and Europe but have struggled to take off in the US. There are many skeptics that do not believe conversion technologies are the solution to our waste issues, and that focusing on recycling is the solution. However, a study was released in February 2016 by the Los Angeles County Department of Public Works showed a clear benefit in terms of greenhouse gas emission for gasification combined with additional recycling and anaerobic digestion, versus the status quo of recycling a portion of MSW and landfilling the rest. To read more click here.

Recycled Plastic Waste to Oil Conversion Technology: A Complement to Plastic Recycling Industry Survey and Trends by 2024 Waste plastic represents a large fraction of the total waste generated worldwide (approx. 500 billion pounds of plastic manufactured per year). The plastic to fuel market is growing and utilizing many technologies including pyrolysis/thermal degradation, catalytic degradation and gasification. Growing population and increasing energy demand is one of the primary drivers for the plastic to fuel market and countries, including China and Japan, have initiated this recycling process on a commercial level. To read more, click here.

How One Massachusetts Grocer is Converting Food Waste to Energy Stop & Shop, a Qunicy, Massachusetts-based grocery store is using anaerobic digestion to convert an average of 95 tons of inedible food per day, an estimated 34,000 tons per year into 1.25 megawatts of clean electricity to power its 1.1 million sq-ft Freetown (Mass.) Distribution Center. The technology has been specifically designed to handle all unsold and un-donated food, including a high percentage of packaged organics, including everything from yogurt containers to egg cartons to onion bags. This is part of a larger goal set by Ahold USA, Stop & Shops parent company and its retail divisions to reduce

their carbon footprint by 20 percent and to achieve zero waste company wide by 2020. To read more, click here.

BioHiTech Global Expands Waste Stream Product Offering With the Launch of Entsorga North America

Entstorga HEBioT Mechanical Biological Treatment (MBT) technology, which is currently used throughout Europe as a cost effective and environmentally efficient means of municipal solid waste (MSW) disposal, will be deployed throughout the northeastern United States. The HEBioT MBT system converts food waste, plastics and other carbon based materials from the mixed MSW stream into an EPA recognized alternative fuel source, Solid Recovered Fuel (SRF) which will be used as an alternative or supplement to fossil fuels. The first facility is expected to be operational in the spring of 2017 in Martinsburg, WV. To read more, click here.

Multimillion-Dollar Funding For Commercial Waste-to-Biofuel Plants

Australian start-up Licella, has developed a unique process in partnership with the University of Sydney the Catalytic Hydrothermal Reactor (Cat-HTR^{TM}) technology to convert low-cost, non-edible, waste biomass into a stable bio-crude oil. Licella signed a $10m joint venture contract with UK company Renewable Chemical Technologies Limited to build a world-first plant to convert end-of-life plastic destined for landfill. They also recently partnered with Vancouver-based paper manufacturer Canfor Pulp Products Inc (CPPI) known as CanFor, to build commercial-scale biocrude plants that will be integrated with the adjoining pulp and paper plants. Only about 30% of a tree becomes paper, the rest is waste. The new biocrude plants will allow CanFor to use the whole tree to create paper and biocurde oil. To read more, click here.

Wood Gasification System Built to Power Campgrounds

A wood gasification system was installed at a park in South Sioux City, Nebraska. It will use wood chips from around 500 trees that must be cut down because of the threat of the Emerald Ash Borer Beetle. The gasifier will generate power for the Scenic Parks campgrounds and a nearby water treatment plant. To read more click here.

Conversion Technology E-Newsletter - July 2016
07/14/2016

ANNOUNCEMENTS

Register Today for the Southern California Conversion Technology Conference
Free Registration, But Space is Limited!

For More Information or to Register Online, visit www.SoCalConversion.org

> ***When: July 29, 2016, Registration Begins at 7:30 a.m., Program Begins Promptly at 8:30 a.m.***
> ***Where: Los Angeles County Dept. of Public Works***
> ***900 S. Fremont Ave., Alhambra, California***

Despite the significant benefits of conversion technologies, their development has been slow in California due to a number of challenges including a lack of financial incentives, uncertain legislative and regulatory framework, and misconceptions regarding conversion technologies. The goal of this conference is to educate attendees on how we can overcome these challenges.

The Conference agenda will include:

- Presentations from State Senator Ricardo Lara and Assemblymember Mike Gatto
- Discussion on successful implementation and best practices of conversion technologies throughout the world
- Presentations on the potential to reduce greenhouse gas emissions with the integrated use of conversion technologies
- How to incorporate conversion technologies into sustainability initiatives
- Information about California projects, permitting, and legislation

View the Full Agenda Online

NEW REPORT RELEASED:

Wasting Opportunities: How to Secure Environmental & Clean Energy Benefits from Municipal Solid Waste Energy Recovery

Berkeley Laws Center for Law, Energy & the Environment released a study, Wasting Opportunities: How to Secure Environmental & Clean Energy Benefits from Municipal

Solid Waste Energy Recovery in May of 2016. The following is a brief summary of the study.
The large volume of municipal solid waste that Californians generate has long presented an environmental challenge. Reduction, recycling and composting have helped reduce this trash stream, but Californians still send 30 million tons of waste to landfills annually. This portion of the waste stream that is unrecyclable can be harvested as a solid waste energy source and could provide multiple environmental benefits. Unfortunately, waste-to-energy conversion processes face obstacles, particularly due to concerns about local air pollution or that energy production might inadvertently discourage source reduction or recycling. To address these challenges, this report describes policy actions that could help the state deploy waste-to-energy generation without compromising other environmental values and goals. To read more, click here.

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
July 21, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

California Resource Recovery Association (CRRA) 39th Annual Conference & Tradeshow
August 7 - 10
Sacramento, CA
http://www.crra.com/annual-conference

Waste Conversion Technology Conference & Trade Show
August 15 - 17, 2016
San Diego, CA
http://wasteconversionconference.com/

WasteCon2016
August 22 - 25, 2016
Indianoplis, IN
https://swana.org/Events/WASTECON.aspx

Resources Recycling Conference
August 30 - September 1, 2016
New Orleans, LA
http://rrconference.com/

NEWS

USDA Announces More Than $8 Million in Payments to Support the Production of Advanced Biofuel

Agriculture Secretary Tom Vilsack announced that the U.S. Department of Agriculture (USDA) is investing $8.8 million to boost the production of advanced biofuels and sustain jobs at renewable energy facilities in 39 states. The USDA is working to support the research, investment and infrastructure necessary to build a strong biofuels industry that creates jobs and broadens the range of feedstocks used to produce renewable fuel. Investments in renewable energy and the biobased economy are a leading part of USDA's commitment to mitigating climate change and promoting a clean-energy economy. To read more, click here.

Scientists Have Found a Way to Turn Trash Bags into Fuel

Every year, humanity makes more products from polyethylene than any other plastic, about 100 million metric tons in all. Polyethylenes make up about 60% of the plastics in landfills worldwide, where they degrade slowly if at all. Researchers report that they've repurposed a pair of existing catalysts to break down a wide array of polyethylenes, converting them into liquid fuels and other valuable chemicals. To read more, click here.

Plastic Waste Can be Converted to Useful Fuel

Every day 4,500 tons of waste is collected in Chennai, of which, 316 tons is plastic waste. However, there is a large amount of plastic waste that is illegally disposed of that is not accounted for and it piles up in the streets. An Indian company has done research in converting waste plastic into fuel and currently runs three plants to generate fuel from waste through pyrolysis. The plastic fuel generated by the machines has a calorific value of 10,400 to 10,800 KJ/kg and can be effectively used to run tractors, diesel electricity plants, boilers, stoves, etc. To read more, click here.

Opinion: A Solution to the Challenge of Land-Disposed Sewage Sludge

For the sake of our health and the health of our land, we need to abolish land-disposed sewage sludge. Sewage sludge can be processed safely by several forms of enhanced thermal decomposition to yield heat for energy, clean exhaust gas equivalent to ambient air, and nearly inert ash that can be land-filled or used for the production of fire bricks or other industrial products. Plasma Arc Gasification (PAG) offers the highest potential for sewage sludge reduction, energy production, cost effectiveness and human and environmental benefit, and it is easily scalable. To read more, click here.

Singapore Scientists Mine Butanol from Fats in Food Waste

Scientists in Singapore have found a green, efficient way to deal with the growing amount of food waste that the country produces. They have genetically modified a type of yeast so that it can convert fats in food waste to recover half its weight in butanol a type of alcohol that can be used as fuel or to make cosmetics and textiles giving a second life to

the over 600,000 tons of food waste that is incinerated in Singapore yearly. This process produces almost four times less carbon dioxide than incineration and half that compared to anaerobic and also uses less energy, requiring 33k kilowatt hour (kWh) for a ton of waste, half of that required to incinerate waste to produce energy, and less than half the 81 kWh per ton needed for anaerobic digestion. To read more, click here.

Mixing Methane & Food Waste

Manteca is in the process of improving its digesters at its wastewater treatment plants to accomplish a cutting edge feat that no other city in the area is doing the conversion of food waste into gas to power municipal garbage trucks. With this new process in place the city will greatly reduce the need to burn methane gas created by the wastewater treatment process which in turn improves air quality and eventually eliminate burying food waste at landfills. To read more, click here.

Small-Scale Biomass Gasification Plant Progressing in California

A 2-MW biomass gasification plant in North Fork, California, will break ground later this year, according to Phoenix Energy CEO Gregory Stengl. The plant will utilize local forest biomass sourced from restoration and fuel reduction activities on local forest lands, including the Sierra National Forest. Electricity generated from the 2-MW power plant will be sold to PG&E. To read more, click here.

Conversion Technology E-Newsletter - August 2016
08/16/2016

ANNOUNCEMENTS

2016 Southern California Conversion Technology Conference Presentations and Videos Now Available

The 2016 Southern California Conversion Technology Conference was a success with over 20 speakers and 200 attendees. Thank you to all attendees, speakers, moderators, and sponsors for making this conference a success! There was a very diverse audience including academia, local jurisdictions, regulators, elected officials, and community environmental groups that engaged in the discussion and expressed willingness to learn more about conversion technologies and the role each stakeholder can play.

Speaker Presentations and videos of the opening remarks, each session, keynote, and closing remarks are now available at www.SoCalConversion.org/conference or directly through the links below:

Opening Remarks **Video**

Panel 1: Conversion Technologies and Best Practices Throughout the World **Video**

Panel 2: Environmental Findings from CT Studies and Projects **Video**

Keynote **Video** with **Study: Wasting Opportunities**

Panel 3: Conversion Technologies and Sustainability **Video**

Panel 4: CA Projects, Permitting, and Legislation **Video**

Closing Remarks/Questions **Video**

EVENTS

Waste Conversion Technology Conference & Trade Show

August 15 17, 2016

San Diego, CA
For more information on this event, please visit the website:
http://wasteconversionconference.com/

Alternative Technology Advisory Subcommittee Meeting (ATAS)
August 18, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

WasteCon2016
August 22 25, 2016
Indianapolis, IN
For more information on this event, please visit the website:
https://swana.org/Events/WASTECON.aspx

Resources Recycling Conference
August 30 September 1, 2016
New Orleans, LA
For more information on this event, please visit the website:
http://rrconference.com/

2nd California Adaptation Forum
September 7 8, 2016
Long Beach, CA
For more information on this event, please visit the website:
http://www.californiaadaptationforum.org/

NEWS

CTs: Why, Where, What, and When (Number 1)
Last weeks 2016 Southern California Conversion Technology Conference (SCCTC) put on by the Los Angeles County Department of Public Works (LACDPW) focused on the need for the California Department of Resources Recycling and Recovery (CalRecycle) to rescind its exclusion from full diversion credit of thermochemical CTs for treating MSW feedstocks. The agenda proceeded through a series of presentations and panel discussions detailing the situation and refuting the States position that CTs do not meet its pollution limits criteria. Editor John Trottis personal interest on this topic goes back nearly two decades and he has seen many crossroads for the way California handles MSW and believes that weve now reached a boundary beyond which lie serious consequences. Until recently when LACDWP and others in southern California took up the cudgel, things have remained pretty much at a standstill but the SCCTC marks the

beginning of change. This situation will be discussed in some detail in this column over the next several weeks. To read more, click here .

Your Food Waste is Clogging up Californias Landfills. Heres how Recycling could Fix it

Food waste makes up 18 percent of the trash buried in California landfills. New goals set by the state calls for 75 percent recycling by 2020, something that can only be accomplished by recycling food waste, as well as other organics. Robert Ferrante and Mark McDannel, engineers with the Los Angeles County Sanitation, discovered that the same kind of recycling they do with sewage solids can work for food scraps. Food waste is processed into a bio-slurry and then is put into the digesters where it produces methane and biogas which are used to power their sewage treatment plant. The Sanitation Districts plans to expand. Its waste digesters have the capacity to take 500 tons per day of food waste, about 10 times more than what they are recycling now. In addition, they are considering adding food waste processing to the Puente Hills Materials Recovery Facility located at the closed Puente Hills Landfill. To read more, click here.

CleanTech Biofuels, Inc. Announces Acquisition

CleanTech Biofuels, Inc., an early stage development company focusing on producing cellulosic biomass from municipal solid waste for conversion to combined heat and power, advanced biofuels, and bio-based chemicals, has acquired a 99% membership interest in 25 Van Keuren, LLC, a New Jersey Limited Liability Company. CleanTech Biofuels intends to build, own and operate its patented Biomass Recovery Process on the site of a new transfer station as an integral part of its operation. The CleanTech patented technology processes, sterilizes, and separates the biomass, recyclables, and inert residuals from municipal solid waste (MSW). The CleanTech process recovers 80 to 85% of valuable resources in the form of sterilized organic material and recyclables from every ton of MSW that it processes. To read more, click here.

Congress Must Act on Bioenergy

Congress is about to make a decision that could have profound effects on the future of American energy. The question they face is this: Should the U.S. treat biomass energy generated from our forestsone of the most renewable, recyclable, and greenest resources on the planetlike a part of our clean energy solution, or should it be treated like part of the problem? Congress is trying to provide clarity, introducing legislation based on well-established science and widely accepted data allowing forest owners to produce renewable, low-carbon biomass energy to power mills and communities. To read more, click here.

Food Waste to Biogas? Asheville Studies Mass Composting

Of the trash tossed into the city's garbage cans annually, 12 million pounds are organic materials. A 2015 study contracted by the city and Buncombe County on how to divert organic material from the landfill said a quarter of what was thrown away was

organic and could probably be broken down. That could help it avoid taking up increasingly premium space in the county solid waste facility. The city will be testing out an anaerobic digester to generate electricity and heat, or process it into renewable natural gas and transportation fuels. Of the remaining material, there are solids that can then go through the composting process using oxygen. Those solids can also be used for dairy bedding or directly applied to cropland. Liquids left over can be used as agricultural fertilizer, the council says. To read more, click here.

OSU-Cascades Eyes Biomass for 'Net Zero Energy' Campus: Nearly $200,000 Federal Grant Will Help Study Feasibility

A grant from the U.S Department of Agriculture could enable planners at Oregon State UniversityCascades to move closer to achieving net zero energy usage across the future campus by studying the potential of integrating a woody biomass thermal energy system and campus-wide biomass district energy to provide heat to campus buildings. Planners estimate that a campus-wide biomass energy system will save more than $366,000 annually over the comparable cost of natural gas heating and reduce fuel sources in local forest areas by 5,500 tons annually. This fuel source is currently controlled by slash burns to reduce quantity of hazardous fuels in forests. To read more, click here.

Conversion Technology E-Newsletter - September 2016
09/14/2016

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
September 15, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

State of Methane and Renewable Natural Gas in California
September 22, 2016
Los Angeles, CA
For more information on this event, please visit the website:
http://us9.campaign-archive2.com/?u=359405747bfcadc64141155b0&id=2b9cdbe712&e=9080d2190e

5th Annual Anaerobic Digestion and Biogas Summit 2016 (Biogas West Coast Conference)
October 10 - 11, 2016
San Diego, CA
For more information on this event, please visit the website: http://www.renewable-waste.com/anaerobic-digestion-conference/

2016 Gasification and Syngas Technologies Conference
October 16 - 19, 2016
Vancouver, Canada
For more information on this event, please visit the website:
http://www.gasification-syngas.org/

Southern California Waste Management Forum
November 9, 2016
Pomona, CA
For more information on this event, please visit the website:
http://www.scwmf.org/web/forum-events/conference/

Renerwable Energy From Waste (REW)
November 14 - 16, 2016
Long Beach, CA
For more information on this event, please visit the website:
http://www.rewconference.com/

NEWS

CTs: Why, Where, What, and When (Number 2)

John Trotti asked Jim Stewart, head of BioEnergy Producers Association to provide some background on the situation CTs face in helping fulfill the states aggressive organic waste diversion mandates. Jim discussed that for an entire decade there has been a scientifically inaccurate statutory definition of gasification, as well as other statutory and regulatory provisions that stand in the way of developing clean technologies capable of converting landfill-bound materials to beneficial use. Solid waste conversion technologies exist that can produce drop-in gasoline with a carbon intensity that meets Californias Low Carbon Fuel Standard. In addition, many states in the US accept the production of renewable energy as a primary step in recycling, not the last step, which is the direction that California needs to head. California needs to see carbon content at its molecular level as an asset, a strategic resource in a circular economy. Conversion technologies could and should be a key element towards meeting Californias major climate change and renewable energy initiatives, if only the states administration and its legislators would move to create a reasonable legislative and regulatory environment for these technologies. To read more, click here.

Fulcrum Works to Convert Trash into Biofuel

Fulcrum BioEnergy, a company based out of Pleasanton, California, has developed a process to convert household trash into biofuel. Their first commercial plant is planned to be operational in the second half of 2018 located in northern Nevadas Tahoe Reno Industrial Center (TRIS). The facility will have capacity to produce 11 million gallons per year of fuel that is 80 percent cleaner than a petroleum product. In 2014, the USDA awarded Fulcrum a $105 million Biorefinery Assistance Program loan to build the biorefinery. However, this biorefinery is one of many they plan to build across the country. To read more, click here.

Garbage to gas: Edmonton Biofuel Plant to Enter Final Stage

Enerkem Inc., which partnered with the City of Edmonton in 2008 on pioneering a project to construct a biofuel plant that turns municipal solid waste into methanol, and soon to produce ethanol, is adding the finishing touches this fall. The plant will convert 100,000 tons of garbage that would otherwise be landfilled into biofuel. Currently, Edmonton is diverting a little more than 50 percent of its waste. The projected percentage for 2017 is between 60 and 70 percent diversion. The long-term target is 90 percent landfill diversion. To read more, click here.

California Biomass Energy Alliance applauds passage of SB 32

The California legislature recently passed legislation to extend the states greenhouse gas (GHG) reduction targets through 2030. One bill, SB 32, sets a target to reduce GHG emissions to 40 percent below 1990 levels by 2030. The second bill, AB 197, give the legislature greater oversight responsibility over climate policy implementation and helps ensure benefits reach disadvantaged communities. Governor Brown has indicated that he will sign both bills. Senator Fran Pavely said the passage of SB 32 sends an unmistakable signal to investors of Californias commitment to clean energy and clean air. To read more, click here.

Processing Plastics

The amount of plastic in the waste stream is increasing and the types of plastics are changing and old MRF equipment is not as effective at sorting it out. The star screen, once regarded as the backbone of the single-stream MRF, is showing its technological and engineering sign of age. It is time for MRFs to begin to invest in newer plastic recycling technologies. Another solution is to capture the lower value plastics for their calorific value or value for conversion into oil or chemicals through conversion technologies. There are also concerns with the plastic recycling industry because of low oil prices but environmental concerns alone will always ensure a place for plastic recycling and as new technologies emerge which are able to process plastics in a more efficient manner, it will be a thriving business into the future. To read more, click here.

Conversion Technology E-Newsletter - October 2016
10/06/2016

ANNOUNCEMENTS

The University of California seeks information from interested biomethane generators and suppliers regarding potential long-term biomethane purchases. The purpose of their Request for Information (RFI) is to gather information and identify suppliers with the resources to service an organization the size and complexity of the University of California and which may possess the requisite expertise in higher education. This RFI will close on **Friday October 7, 2016 at 4:00pm PST**. The RFI has been posted to this site at the bottom of the page titled Biomethane Supply:
https://bids.sciquest.com/apps/Router/PublicEvent?CustomerOrg=UCOP&FromBranded=true

EVENTS

5th Annual Anaerobic Digestion and Biogas Summit 2016
October 10 11, 2016
San Diego, CA
For more information on this event, please visit the website:
http://www.renewable-waste.com/Biogas

2016 Gasification and Syngas Technologies Conference
October 16 19, 2016
Vancouver, Canada
For more information on this event, please visit the website:
http://www.gasification-syngas.org/

Alternative Technology Advisory Subcommittee Meeting (ATAS)
October 20, 2016
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

Southern California Waste Management Forum
November 9, 2016

Pomona, CA
For more information on this event, please visit the website:
http://www.scwmf.org/web/forum-events/conference/

Renerwable Energy From Waste (REW)
November 14 - 16, 2016
Long Beach, CA
For more information on this event, please visit the website:
http://www.rewconference.com/

U.S. Composting Council Conference & Tradeshow
January 23 26, 2016
Los Angeles, CA
For more information on this event, please visit the website:
http://compostingcouncil.org/compost2017/

NEWS

Meet the 22-Year-Olds Tackling our Plastic Waste
Before turning 20 years old, Miranda Wang and Jeanny Yao came up with a solution of what to do with the millions of tons of plastic waste that spoil our oceans and fill our landfills.Wang and Yao have bioengineered a bacteria to break down plastic faster than the 500 to 1,000 years it takes for plastic to breakdown in a typical landfill with a final product that has a beneficialuse. In their company's "upcycling" process, plastic waste is chemically broken down into a low molecular weight compound, which then can be fed to microbes, as a basic foodstuff or energy source.In turn, the engineered microbes produce biosurfactants for fabric manufacturing. Wang and Yaos company BioCellection is in negotiations with a city in California to integrate their technology intoits waste recycling process. To read more, click here.

Case for Co-Digestion at Water Resource Recovery Facilities
Food waste has energy recovery potential of almost 140 trillion BTUs and in the US, wastewater has energy recovery potential of 851 trillion BTUs/year. Facilities originally built to solely treatwastewater are now being upgraded and operated to be water resource recovery facilities (WRRFs). Approximately 150 WRRFs in the U.S. already accept food waste hauled to their digesters for energy recovery.There is great nationwide potential to expand this number to the 1,200 (and growing) WRRFs with AD. Food waste can either be hauled to the digesters which has the greatest potential for energy recovery orthrough grinders and sewer conveyance which has the lowest cost to the community. Unfortunately, conventional wastewater treatment plants were not designed to recover carbon from wastewater.Improvements to primary treatment would need to be made in order to utilize the grinders and sewer conveyance method. To read more, click here.

Lockheed Martin Opens WTE Facility in New York

Lockheed Martin opened a new bioenergy facility in Owego, New York featuring Concord Blues advanced technology, which converts waste into clean, renewable energy by using advanced gasification. The facility, will process eight tons of waste per day generating 250 kilowatts of power for Lockheed, ultimately reducing its carbon footprint and the amount of waste sent to landfill. To read more, click here.

Historic First: Fighter Jet Takes Flight Powered Only by Biofuel

Continuing its quest to maximize the use of renewable fuels, the Navy successfully used a 100 percent biofuel blend to power fighter jets during a test at Naval Air Station Patuxent River inMaryland this month. The fuel is produced by Florida-based Applied Research Associates and Chevron Lummus Global. The fuel uses the same feedstock as another 50 percent advanced biofuel blend already usedby the Navy but goes through a unique conversion process to provide a fully synthetic fuel that does not need to be blended. Test pilot Lt. Cmdr. Bradley Fairfax said the jet flew completely the same asit would on petroleum fuel. To read more, click here.

Bill Gates, Total Invest Millions in Biomass Conversion Technology

Bill Gates and energy company Total are investing $14 million in a biomass conversion technology called Plantrose from Renmatix. The technology can work with biomass such as wood, agriculturalresidues, energy grasses and municipal solid waste. The Plantrose process involves supercritical water and heat to create cellulosic sugars which can be used in bioplastics or biofuels.This investment will be used for new biorefineries in the U.S., Canada and India to commercialize the technology. Renmatix hopes this will encourage bioproduct developments. To read more, click here.

Waste to Power 10,000 UK Homes

The worlds largest waste-to-biogas conversion plant is set to open in the UK, which plans to use advanced enzyme technology to handle waste. The energy conversion process will work by separatingorganic matter such as paper and foods from other waste streams and then washing it free of contaminants using enzymes in a giant reactor. The enzymes will take out all the organic compounds in the wastematerial and liquefy them so that, after washing, they come out as the perfect sludge, full of fats and oils that can be converted to biogas. An estimated 15 tons of trash per hour 120,000 tons ayear will be sorted at the plant and used to power nearly 10,000 homes. To read more, click here.

Conversion Technology E-Newsletter- November 2016
11/16/2016

ANNOUNCEMENTS

The City of Phoenix has issued the Transforming Trash into Resources II Request for Proposals (RFP). They are looking for trash innovators who can transform carpeting, latex paint and urban wood into new products or reuse them for a new purpose. The RFP is posted on their website and will close on Wednesday, December 14, 2016 at 1:00 PM. All questions about this active RFP must be submitted in writing to Robyn.Skramstad@phoenix.gov.

EVENTS

Renewable Energy From Waste (REW)
November 14 - 16, 2016
Long Beach, CA
For more information on this event, please visit the website:
http://www.rewconference.com/

U.S. Composting Council Conference & Tradeshow
January 23 - 26, 2016
Los Angeles, CA
For more information on this event, please visit the website:
http://compostingcouncil.org/compost2017/

VerdeXchange Conference
January 29 - 31, 2017
Los Angeles, CA
For more information on this event, please visit the website:
http://www.verdexchange.org/

Zero Waste Symposium 2017
February 21, 2017
San Diego, CA
For more information on this event, please visit the website:
http://zerowastesandiego.org/zw-symposium-2017/

NEWS

Lebanon Debuts Largest Renewable Energy Plant of Its Kind

The largest renewable energy plant of its kind in the world began operation in Lebanon, Tennessee. Every spare tire, along with scrap wood from businesses within a 20-mile area, will be converted into energy through gasification. With the city landfill less than a decade away from capacity, the plant will save 16 million pounds of waste every year. Ninety-five percent of the waste will be converted into electricity which willpower the wastewater treatment plant across the street and the remaining 5percent of the waste will turn into biochar which will be sold to local farmers to help fertilize their crops. To read more, click here.

EPFL: Turning Biofuel Waste into Wealth in a Single Step

Biomass used to produce biofuels contains lignin, a bulky, complex organic polymer that gives plants rigidity but is difficult to process and is usually discarded. Swiss scientists from cole Polytechnique Fdral De Lausanne (EPFL) in collaboration with University of Wisconsin-Madison, the US Department of Energy, and Purdue University have now turned lignin from a nuisance to an important source of biofuel by simply adding formaldehyde to the process, converting up to 80 percent of it into valuable molecules for biofuel and plastics. The formaldehyde stabilizes lignin and prevents it from degrading during the process, increasing the amount of biofuel produced by 3-7 times. The chemistry is relatively straightforward; the real challenge is finding investors for a pilot facility to demonstrate this because of inconsistent political support and widely varying energy prices. To read more, click here.

Sustainable Technologies to Fuel the Future

For the past 10 years, Teesside University Professor Maria Olea has been working on a number of research projects which can be summarized as advanced catalysis to sustainable technologies wither main focus on the production of synthetic fuels via thermostatic routes, mainly biomass and waste-to-fuel routes. One of the main thermostatic routes is pyrolysis. Her main research success to date has been in the conversion of biogas (consisting of about 60% methane and 40% carbon dioxide) as produced by anaerobic digestion of municipal wastewater sludge, into syngas (mixture of carbon monoxide and hydrogen). Going forward, her and her teams' mission is to focus on heterogeneous catalysis in their quest to save the planet for future generations. Their ultimate goalies zero waste, zero emissions and they are confident that we are not far away from achieving that. To read more, click here.

Utah's Hogle Zoo Looks to Keep More Waste Out of the Landfill

Salt Lake City, Utah's Hogle Zoo currently diverts less than 25% of their waste from landfills. They have recycling bins around the park for the guests however the majority of

what is sent to the landfill is waste from the animals. The zoo will be sending their animal waste to an anaerobic digester built at the South Davis Sewer District which will increase their diversion to 37% and produce natural gas and fertilizer that can be used for local farming communities. To read more, click here.

Conversion Technology E-Newsletter - December 2016
12/22/2016

ANNOUNCEMENTS

Your assistance is needed. In partnership with multiple entities California Association of Sanitation Agencies (CASA) will apply for a U.S. Forest Service Wood Innovations grant to test the applicability of tree mortality biochar as a gas phase wastewater filtration medium. This new area of research focuses on the sectors ability to substitute an imported filtration substance to one locally produced from dead trees and other forest waste. CASA is requesting volunteers, wastewater facilities for comparison, and/or letters of support for the project by January 20th. For further details, click here or contact gkester@casaweb.org.

EVENTS

Alternative Technology Advisory Subcommittee Meeting (ATAS)
January 19, 2017
Alhambra, CA
For more information on this event, please visit the website:
http://dpw.lacounty.gov/epd/tf/meetings.cfm

U.S. Composting Council Conference & Tradeshow
January 23 -26, 2017
Los Angeles, CA
For more information on this event, please visit the website:
http://compostingcouncil.org/compost2017/

VerdeXchange Conference
January 29-31, 2017
Los Angeles, CA
For more information on this event, please visit the website:
http://www.verdexchange.org/

Zero Waste Symposium 2017
February 21, 2017
San Diego, CA

For more information on this event, please visit the website:
http://zerowastesandiego.org/zw-symposium-2017/

Rethink Methane
February 21-22, 2017
Sacramento, CA
For more information on this event, please visit the website:
http://rethinkmethane.org/

NEWS

2016 REW Conference: Circular Circumstances
The Renewable Energy from Waste (REW) Conference was held in November in Long Beach, CA. Speakers during a session titled Waste-to-Energy in the Circular Economy shared several examples of the added value of waste. A critical step in sustainable materials management of plastics is post-use collection and recycling everything that can be recycled, or break it back down to a monomer, or if that can't be done, then getting the energy back out of it. Additional discussions in the panel session included research on gasification, and that anaerobic digestion has shown to be financially viable in many states. To read more, click here.

New Report Highlights Investment Benefits of Advanced Energy From Waste
According to the environmental consulting firm Eunomia, there are a total of 12facilities using Advanced Conversion Technology (ACT) in the UK that are either operating or under construction. The operating facilities produce a combined estimated 200 MW of electrical power, with future planned facilities possibly increasing that output to 600 MW. Should the new facilities run successfully, it may attract new investors to the promising market of ACT facilities. However, factors such as securing residual waste for operations long enough to repay investors, and the economic effects of Brexit bring in a level of uncertainty. Eunomia concludes that despite this, early support of ACTs may lead to a refocus of higher value applications. To read more, click here.

Containerization of the G3-UHt Gasification System
Developed by the company Powerhouse, the G3-UHt Gasification System (PHE-G3) has been arranged to be containerized. This will allow the system to be shipped to facilities in the UK for on-site demonstrations in a facility that has yet to be chosen. The sites that are under consideration are active waste and recycling operations facilities. To read more, click here.

Waste In, Energy Out: The Costs and Benefits of Anaerobic Digesters
Anaerobic digesters are a mature, proven technology. They take sludge, manure, and other organic waste materials and produce methane (natural gas) fuel. Nobody questions their technological capabilities. However, the question remains as to their economic

benefits. In terms of dollars and cents, how much economic sense do anaerobic digesters make? According to a study on digesters of agricultural waste, the payback period (capital costs divided by annual net benefits) can be between five and six years. There are also a number of digesters beginning to process organic material from the municipal solid waste stream with enhanced design of the digesters. There are also a number of consulting experts that specialize in the assistance of planning, permitting, and engineering of the digesters. Some example projects mentioned are the Organic Waste Recycling Center for the Sacramento South Area Transfer Station that fuel their Atlas Disposal trucks with the very material that those trucks bring in; and Gills Onions, which takes 100 tons of onions and turns it into useful biogas and animal feed. Another example is the Heartland Biogas facility that takes local cow manure and organic food waste that will become 50 MW of renewable natural gas to be injected into the Colorado Interstate Gas Company pipeline. To read more, click here.