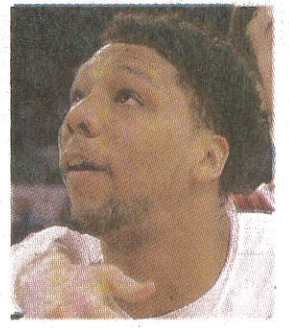


OUR DRAFT PICKS

Karl-Anthony Towns? For the Lakers, he's a long shot. Jahlil Okafor? He's the favorite at No. 2. And D'Angelo Russell? He might be the smart pick. The Register predicts every nugget of today's NBA draft. **SPORTS 1**



The squeeze on landfills is leading Costa Mesa residents to turn leftovers into energy. Your town might be next.

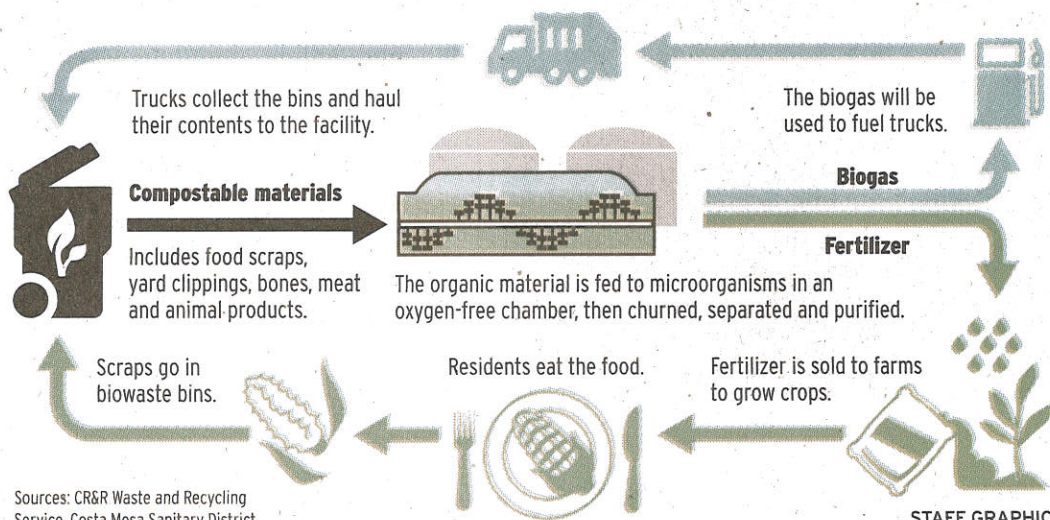
FOOD TO FUEL



SHUTTERSTOCK.COM

Closing the food waste cycle

A new \$25 million anaerobic digester under construction in Perris will allow the region to recycle food scraps like never before. Costa Mesa, Temecula, Calimesa and Los Angeles have signed deals to use the facility owned and operated by CR&R Waste and Recycling Service.



Sources: CR&R Waste and Recycling Service, Costa Mesa Sanitary District

STAFF GRAPHIC

Joyce Sandison's kitchen garbage bin sat nearly empty, but a clear plastic pail in her sink bulged with carrot peelings, corn cobs and potato skins.

Just hours after Costa Mesa became the first city in Southern California to launch a food-scrap recycling program, the 84-year-old retired loan processor was ready to turn her vegetable medley leftovers into fertilizer and fuel.

"Times are changing," Sandison said, standing in the kitchen of a home she bought in the 1950s. "But we're happy to comply."

Sandison and 116,000 others in Costa Mesa and northeast Newport Beach are part of the next big thing in recycling —

transforming food to energy.

On Monday, the Costa Mesa Sanitary District delivered several hundred new organic-refuse bins to homeowners, and it plans to distribute 20,000 more by mid-August.

Starting now, Costa Mesa residents with the appropriate receptacles are being asked to put everything from chicken bones to apple cores in separate containers from other trash.

Smelly? Some fear so.

"It smelled a bit last night, so I dumped it (in the new bin outside)," said Jerry Sandison, 87,

SEE WASTE • PAGE 14



JORDAN GRAHAM
STAFF WRITER

O.C. HIRING OUTLOOK BRIGHT

Chapman economists predict the best local job growth in past 15 years.

Orange County will add more jobs this year than at any time in the past 15 years, buoyed in part by a reviving national economy, Chapman University economists predict.



MARGOT ROOSEVELT
STAFF WRITER

The county's momentum is "fantastic," said Esmael Adibi, director of the University's A. Gary Anderson Center for Economic Research. "Every sector will show positive job growth."

According to Chapman's biannual forecast, released Wednesday, county payrolls will grow by 47,000 jobs this year, or 3.1 percent. That's the highest rate since 2000, when employers created 42,400 positions — also a 3.1 percent jump.

SEE JOBS • PAGE 15

Rohrabacher accuses ex-treasurer of stealing \$173,000

Jack Wu served on congressman's campaign staff for seven years.

BY MEGHANN M. CUNIFF
STAFF WRITER

Congressman Dana Rohrabacher has filed a complaint accusing his former

12.6 POUNDS

Average amount of waste per person per day generated by Californians, though that includes business refuse.

Source: CalRecycle, EPA

6.3 POUNDS

Average amount of waste per person per day Californians can currently send to the landfill.

2.7 POUNDS

Average amount of waste per person per day Californians will be able to send to the landfill in 2020.

35 MILLION

Tons of waste that heads to California landfills annually.

22 MILLION

Tons of additional material California must recycle annually to divert 75 percent of trash from landfills by 2020.

32 PERCENT

Amount of waste in landfills that is compostable organic materials.

WASTE

FROM PAGE 1

Joyce's husband. "I'm more worried about attracting flies."

Costa Mesa is the first city to get into food recycling, but over the next few years, many others in Orange and Riverside counties are likely to start similar food-scrap recycling programs, as they scramble to comply with looming state restrictions on waste disposal.

By 2020, California law calls for the state to divert 75 percent of its garbage away from landfills - up from its current directive of 50 percent. Over the next five years, California will need to figure out how to recycle an additional 22 million tons of material annually, according to CalRecycle, the state's department of recycling.

About one-third of all garbage in landfills is food waste, and garbage experts say that's the stuff that's easiest to send somewhere other than a dump.

Already, other cities are set to join Costa Mesa in recycling food scraps. Los Angeles, Temecula and Calimesa soon will be paying their own early adopter rates to send food waste to Stanton-based CR&R Waste and Recycling Service's new anaerobic digester - a \$25 million facility in Perris that will churn food scraps into clean-burning biogas.

The Perris facility is under construction and set to open later this year. In the interim, the scraps from Costa Mesa - the only city actively recycling food - will go to Victorville to be composted.

In some ways, the digester in Perris figures to operate on principles of very basic biology.

Everything from bones and half-eaten veggies will be added to traditional



Workers from CR&R Environmental Services unload the new organics recycling trash bins from a truck on Continental Avenue. Costa Mesa residents will use the bins to recycle food scraps.



PHOTOS: STEVEN GEORGES, CONTRIBUTING PHOTOGRAPHER

A tag lists which food scraps and green wastes can be recycled in the new bins.

green wastes, such as grass clippings, in an oxygen-free chamber. There, microorganisms consume the garbage and excrete it as fertilizer and fuel - enough fuel to power the very trucks that collected the waste. And unlike most compost sites, the CR&R plant will be capable of digesting offal and other animal waste.

"There are not enough composting facilities in Orange County to meet that (upcoming) demand," said Scott Carroll, general manager of the Costa Mesa Sanitary District, which guaranteed itself CR&R's lowest disposal rate in California by signing up first.

"I think other cities are going to have to do something to comply with these laws."

A dozen other Orange County cities have expressed interest in signing up to use CR&R's digester, including Stanton, Dana Point, Lake Forest, Newport Beach, Orange, Tustin, Aliso Viejo, Laguna Hills, Laguna Nigel, Rancho Santa Margarita, San Clemente

FOOD-SCRAP RECYCLING 101

Anaerobic digester: These are the engines that drive food-scrap recycling. Inside these massive facilities, meal leftovers and yard clippings are dumped into oxygen-free chambers, where microorganisms feast on the waste over a period of weeks, converting the trash into fertilizer and biogas fuel. Unlike compost piles, digesters are capable of taking in bones and animal scraps. A new \$25 million anaerobic digester is being constructed in Perris.

Compostable trash bags: Unlike the rest of your trash, food scraps cannot be discarded in regular trash bags. For people uncomfortable with placing meal scraps directly into their bins, compostable garbage bags provide an alternative, and can help reduce the chance of leftovers stinking up your kitchen. Compostable bags are sold at Target and Mother's Market. Newspapers are also compostable and can be used to line kitchen trash cans.

Odor killers: The Costa Mesa Sanitary District recommends residents place a plastic food-scrap pail beneath the sink to confine the stench and sprinkle baking soda in the container if it begins to smell. If that doesn't work, composters recommend stainless-steel compost pails with charcoal filters in the lid to help absorb odors.

and San Juan Capistrano.

The facility will expand its capacity each year until 2018, when it is expected to eat up and spew out 335,000 tons of waste annually. Costa Mesa expects to produce 14,000 tons of biowaste next year.

Similar facilities have opened to serve San Jose and South San Francisco, and dozens of smaller anaerobic digesters are spread

throughout California, operating as pilot programs, cleaning wastewater, or servicing restaurants, farms and other businesses.

Those plants have proved profitable for operators, but they've also provided a way to reduce greenhouse gases by trapping the methane gas that otherwise would have seeped out from landfills and into the atmosphere.

Plus, these programs could limit the need to open new landfills by expanding the lifespan of existing ones.

The Costa Mesa program - like other forms of recycling - is voluntary. The Costa Mesa Sanitary District isn't planning to employ trash cops to rummage through bins to ensure recycling compliance.

But Temecula Council-

man Matt Rahn said he doesn't believe California officials who say the restrictions will remain only at the state level and, as such, voluntary. He says cities eventually will be forced to increase the amount they recycle, which could make food recycling the norm.

"My experience with recycling ... is that the requirements are only going to get more arduous," said Rahn, who once worked for San Diego's environmental services department.

"Finding landfill space is already getting challenging. (And) we're going to have to get more creative as the requirements increase over the year," Rahn added.

"So programs like this are a huge opportunity for our city."

At California's current recycling rate, the state's landfills will fill up by 2057, according to CalRecycle. Food recycling could be part of a bigger solution that might add an additional three decades to that lifespan.

But even if food recycling is never mandatory, it still could be popular.

In a recent Sanitary District survey, 73 percent of Costa Mesa residents said they would be willing to pay the estimated \$1.72 extra per month that the "organics recycling" program will eventually cost, regardless of potential inconveniences.

On Monday morning, Paul Wehr stood outside his Costa Mesa home, examining his just-delivered new food recycling bin. He recalled growing up in rural Massachusetts where, decades ago, his family burned its trash in a 55-gallon steel drum. His views on recycling have come a long way, he said.

"If anybody considers this a workload they can't handle, they've got a problem," Wehr said.

"It's a little more effort, but it's worth it in the long run."

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FREEWAY FACEOFF

The Kings beat the Ducks in regulation for the first time in 11 regular-season meetings.

The Ducks' Rickard Rakell gets squeezed by the Kings' Alec Martinez, left, and Dwight King on Sunday at Honda Center. The Kings won, 3-2.

MICHAEL GOULDING, STAFF PHOTOGRAPHER

PRICE: \$1 • MONDAY, JAN. 18, 2016 • OCREGISTER.COM

FROM TABLE SCRAPS TO THE SCRAP HEAP

Costa Mesa residents have increasingly accepted the idea of recycling organics, a study says.



JORDAN GRAHAM STAFF WRITER

COSTA MESA • It required a wholesale change in thinking for Shawna Rousseau to view discarded chicken bones and vegetable stems as something that still held value.

But six months after the Costa Mesa Sanitary District launched the first municipal organics recycling program in Southern California, Rousseau, 42, now sees separating old food from the rest of her garbage – so it eventually can be turned into energy – as just another part of normal life.

Most Costa Mesa residents apparently feel the same.

Two-thirds of the city's single-family households have begun saving and separating their leftovers since the program began in late June, according to a recent UC Irvine study.

SEE RECYCLE • PAGE 5

“I hadn't spent a whole lot of time thinking about our garbage, but this changed that.”

SHAWNA ROUSSEAU A COSTA MESA RESIDENT WHO HAS BEEN RECYCLING HER FOOD SCRAPS



A worker wheels a stack of organics recycling bins to residents on Evergreen Place in Costa Mesa in June.

FOOD RECYCLING NUMBERS

66 percent of Costa Mesa single-family households began recycling food scraps.

77 percent of single-family households in a UC Irvine study reported recycling food scraps after they were told it was the new norm in Costa Mesa.

45 percent of Costa Mesa's single-family homes dispose of their food scraps into kitchen pails separate from their other trash.

7.1 million pounds of recyclable organic material was collected during the first six months of the new program.

Sources: UC Irvine study, Costa Mesa Sanitary District

CLINTON, SANDERS CLASH IN DEBATE

Candidates split on health care, tax burden.

Hillary Clinton and Bernie Sanders duelled on health care, gun control, Wall Street and foreign policy Sunday in the last Democratic presidential primary debate before voting begins. Former Maryland Gov. Martin O'Malley, weak in the polls, tried to present himself as the voice of reason as Clinton and Sanders challenged each other on taxes and financing federal programs they're proposing. **NEWS 3**

New limited sanctions on Iranians

The U.S. is imposing new, more limited sanctions on some Iranian citizens and companies accused of violating U.N. resolutions against ballistic missile tests. The announcement came Sunday shortly after a Swiss plane carrying Americans freed by Iranian authorities departed Tehran. **NEWS 4**



LEONARD ORTIZ, FILE PHOTO Jesse Simmons embodied rights leader's message.

In Martin Luther King

NFL PLAYOFFS

BECAUSE OF HER, WOMEN CAN BE SAFE

RECYCLE: Program encourages Costa Mesa to save food scraps

FROM PAGE 1

dy. And the sanitary district intends to use the results of that study to get more people into the program, promoting food recycling as the new normal.

In its first six months, the district's program 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.

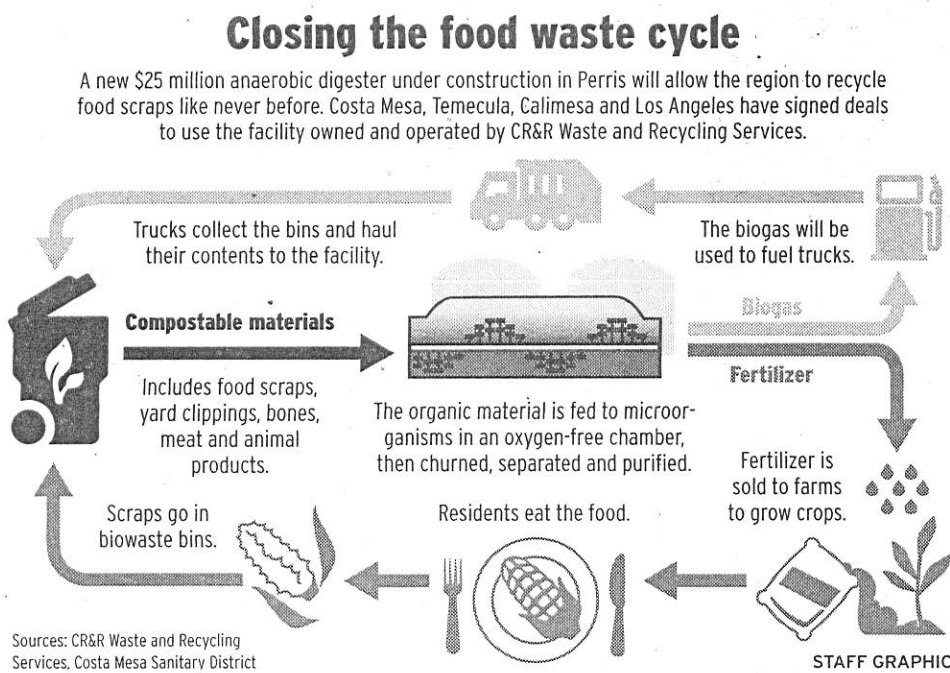
And beginning next month, that organic material will be trucked to a new anaerobic digester – a \$25 million facility in Perris owned by Stanton-based CR&R Waste and Recycling Services. There, the digester will churn the brew into clean-burning biogas, used to power the very trucks that hauled the waste in the first place.

"I hadn't spent a whole lot of time thinking about our garbage, but this changed that," Rousseau, a project manager at an employee training company who has lived in Costa Mesa for 16 years, said of the program.

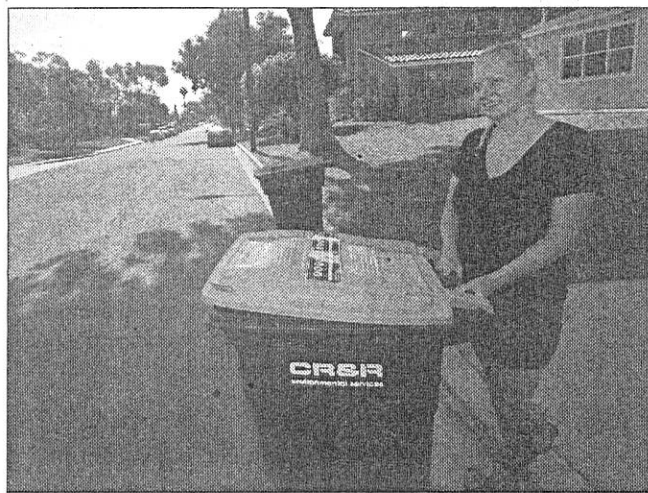
Food recycling is now "my normal train of thought as to what I do. And if it helps the environment, why not adopt it?"

That attitude – and Costa Mesa's quick adaptation to new habits – bodes well for a practice that represents the next step in keeping residents' trash out of landfills. CR&R, the trash hauler that contracts with the Costa Mesa Sanitary District and runs the organics-recycling program, is hoping food-scrap recycling will become popular in large swaths of Orange County.

The waste services company collects residents' trash in 14 Orange County cities. Costa Mesa and Stanton have already signed on for organics recycling.



A tag lists the types of food scraps and green waste that can be placed in the bins distributed in Costa Mesa in June.



Jessica Pettus receives a new bin for recycling food scraps on Arbor Street in Costa Mesa in June.

cling. Dean Ruffridge, senior vice president for CR&R, said Aliso Viejo, San Clemente and Laguna Nigel are close to agreements for the new service.

Nine other cities, he said, have expressed some interest – including Dana Point, Lake Forest, Newport Beach, Orange, Tustin, Laguna Hills, Rancho Santa Margarita, San Juan Capistrano and La Habra.

The two biggest concerns Ruffridge hears from these cities and sanitary districts are timing (CR&R's Perris facility has

limited space until it expands) and cost (the service costs households an extra \$1.30-\$5 per month, depending on the city).

Many municipalities are looking to act soon. A state law that takes effect in 2019 will essentially force cities to keep green waste out of landfills. The state has set a goal of diverting 75 percent of waste from landfills, and the California Air Resources Board announced in September it would consider regulations to eliminate all organics from landfills by 2025.

For Costa Mesa residents, the concern has been whether the now voluntary food-scrap recycling program would be burdensome. Would keeping food scraps out of the trash bin be too much work? Would it smell? Would it attract bugs?

Residents are still split over those questions.

Patti Ferguson said she put her yard clippings in her new green bin, but doesn't recycle food scraps because she fears the container would get "smelly and gross."

Some residents on a Costa Mesa Facebook page recently traded tips on how to combat the smell – buy compostable bags, freeze your waste until you take it out to the bin, transfer your scraps from your kitchen pail to your outdoor bin daily.

Others complained that the new system was simply too much work.

Even Rousseau said she stopped recycling her meal leftovers during a recent fall heat wave, claiming the smell became too rank.

According to the UC Irvine study, those concerns haven't stopped locals from changing their habits.

Sally Geislar, a UC Irvine doctoral student who created and ran the study, said that one of the most powerful tools in convincing people to opt in could be something called "norm communication" – the idea that people are more likely to adopt a new practice if they think most of their neighbors are doing it too.

For example, 50 years ago dog walkers weren't expected to carry plastic bags to pick up after their pets. Today, anybody spotted not picking up after their dog would be violating the social norm and might even receive a public scolding.

While food-scrap recycling is relatively new, Geislar found that Costa Mesa residents responded to norm communication nonetheless. When she told some people in the study that most residents recycle their food scraps, food recycling jumped from 66 percent to 77 percent among that group.

"The more that we can highlight that people are adopting this new behavior, the more likely people will be willing to participate," said Geislar, from UCI's Department of Planning, Policy and Design.

Geislar said the Costa

Mesa Sanitary District is the first municipality that she knows of to test how "norm communication" affects people's food-waste management.

Geislar initially proposed the idea for the study just to the district, but eventually received funding from the district, UC Irvine and external grants. It involved 1,035 households and lasted six months.

Scott Carroll, general manager of the Costa Mesa Sanitary District, said the district would use the insight gained from the study to better communicate with locals. District representatives met last week with the coordinator for OC Waste & Recycling to share the study's findings.

Food-scrap recycling has its detractors, and the program still has its flaws. Organics recycling is difficult in apartment buildings, and it hasn't been widely adopted in large complexes. Food scraps from residences makes up a small portion of total trash produced, and some don't think the extra effort is worth what's saved.

Resident Andy Smith and former Costa Mesa Sanitary District board member Jim Fitzpatrick pointed out that CR&R benefits from residents' front-end sorting by selling less-tainted recyclables and said the company should be sharing that revenue with customers through more favorable contracts.

If Geislar's study is correct, food recycling soon could be something Orange County residents regard as part of their daily routine.

"We adapted really easily," said Joyce Sandison, 84. "As far as I'm concerned, it's working out really well."

CONTACT THE WRITER: 714-796-7960 or jgraham@ocregister.com

Back Surgery WARNING!

Spinal Stenosis and Bulging, Herniated, and Degenerative Discs

Fountain Valley, CA- In a 2002 issue of *Neurosurgical Focus*, a peer-reviewed article was published by a Dr. Michael D. Martin, MD *et al.* in which the third sentence states: "The disc itself is active tissue that contains significant mechanisms for self-repair." That article was published by a neurosurgeon and written directly for neurosurgeons.

"The Disc Itself Is Active Tissue..."

So what does that really mean to us? It tells us that the disc itself does have a God-given ability to

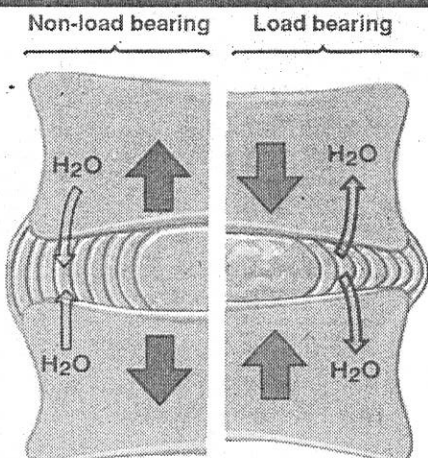


Fig 1: Proper anatomy of the discs and the pump mechanism of disc nutrition.

Symptoms Are NOT The Problem

Now the symptoms of pain,

over the lights but the problem will NOT be fixed...the problem is still present.

Let's take a look at a plant for example...if the leaves on a plant begin to turn brown, would you say that the brown leaves are the plant's problem? Of course not, the leaves turning brown is just a condition that is telling you that there is something wrong with the plant. The plant is unhealthy and needs water and nutrients. You could spray paint the leaves green but it just covers up the condition. The underlying problem still exists and will continue to produce brown leaves with

son and can only be determined after a detailed neurological and orthopedic evaluation. We do NOT accept everyone for treatment and will let you know if we can accept your case for treatment.

Dr. Warren, DC at Coast Physical Medicine in Fountain Valley will do a spinal disc severity examination to determine the extent of your disc damage for only \$70 if not covered by insurance. This examination will consist of a detailed neurological evaluation, extensive orthopedic testing, and a detailed analysis of the findings of your evaluation. He will sit down with

Costa Mesa, CA - Orange County Residents Turn Kitchen Scraps To Power Source

Published on: January 18th, 2016 at 08:48 PM

By: AP



A tag from CR&R Environmental Services on the new organics recycling trash bins being delivered to Costa Mesas residents list the types of food scraps and green wastes that can be used in the new trash bins. (Photo Courtesy VINNews.com/ocregister.com/STEVEN GEORGES)

Costa Mesa, CA - Some Orange County residents are learning how citrus peels, lawn clippings — even chicken bones — have a second life as a clean energy source.

Six months ago, the Costa Mesa Sanitary District started asking residents to separate kitchen scraps and yard waste so the materials could help make fuel.

It's the first such program in Southern California, and the response has been strong, The Orange County Register reported Monday (<http://tinyurl.com/gv673nv>).

So far, more than 7 million pounds of material that otherwise would have gone to a landfill has been recycled. Already, nearly half of single-family households separate scraps into a separate kitchen pail, according to a study of more than 1,000 households conducted by the University of California, Irvine.

Instead of heading for the trash, the scraps are trucked to a compost pile in the desert. Starting next month, they will be fed into an anaerobic digester that creates a brew that gives of biogas.

That gas will be used to power the trucks that hauled the waste.

Government is helping create a market for the material. California has a goal of diverting 75 percent of waste from landfills, and the California Air Resources Board plans to consider regulations that would eliminate organic waste from landfills by 2025.

The program still has its flaws. In apartment buildings, it's not easy to create space for scraps that can get smelly as they sit. Even the most conscientious recyclers don't produce a large volume of material, and some people don't think it's worth the effort.

Overall, though, Costa Mesa seems to be succeeding.

"I hadn't spent a whole lot of time thinking about our garbage," said Shawna Rousseau, a Costa Mesa resident of 16 years. "It's (now) my normal train of thought as to what I do. And if it helps the environment, why not adopt it?"

You can view this article online at VosIzNeias.com/227663

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Anaerobic Digest

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BioCycle March/April 2014, Vol. 55, No. 3, p. 27



CNG will be used in CR&R Inc.'s collection fleet

(primarily food and green waste) in phase one, and is expandable to process over 300,000 tons/year in three additional phases. CR&R is integrating the new plant into existing operations at its Perris materials recovery facility.

CR&R selected the Eisenmann horizontal plug flow anaerobic digestion system for its facility. The plant features four parallel primary digesters. Following preprocessing, each digester vessel is automatically loaded via conveyors and dosing bins. The digesters are equipped with a slow moving horizontal agitator to ensure proper mixing of the feedstock. Biogas will be upgraded in a Greenlane conditioning unit, and then compressed for use as fuel in CR&R's fleet of collection vehicles. Excess renewable CNG will feed into a natural gas pipeline distribution system. Digestate will be utilized as a soil amendment.

Perris, California: Sanitary District Commits Organics To New Digester

The Costa Mesa (CA) Sanitary District awarded a contract to divert food and green waste to CR&R Inc.'s new anaerobic digester currently under construction in Perris. Residents will be given an organics cart for curbside setout. Trash and organics collection will take place on the same day. "The contract award is seen by CR&R as an important step for the development of AD in California, and a big step toward a zero waste future," says Paul Relis of CR&R, and a member of the Board of the American Biogas Council. "Design and engineering of our AD project is in full swing." The facility is permitted to process over 80,000 tons/year of organic waste

Little Rock, Arkansas: Magic Dirt From Digested Manure

An alternative to peat was introduced recently by Cenergy USA, and is being distributed to retailers in the Pacific Northwest for the 2014 growing season. Magic Dirt™ is made primarily from nutrient-rich digested manure and farm wastes. The product has been certified as 100% BioBased by the USDA's Biopreferred Program and approved for organic production by the Idaho Department of Agriculture. The manure is processed in a DVO, Inc. two-stage mixed plug flow digester at Cenergy USA's facilities in the Northwest. "Every cubic yard of Magic Dirt is the by-product of generating more than 100 kWh of renewable energy and removing greenhouse gases from the environment," notes Bob Joblin, a partner in Cenergy USA. "It has pH within the 6-7 range and a guaranteed analysis of 1.15% Total N, 0.30% available phosphate and 0.35% soluble potash."

Wellesley, Massachusetts: Projected Global Markets For AD Equipment

In February 2014, BCC Research, a market research firm based in Wellesley, Massachusetts, released Waste-Derived Biogas: Global Markets for Anaerobic Digestion Equipment, a technical report that details projections of the global markets for anaerobic digestion equipment from the years 2000 to 2018. The report considers markets for biogas derived from four different feedstock sources: municipal and domestic sewage; industrial wastewater; landfill gas; and agricultural wastes, which includes animal manures, crop residues and energy crops, in the case when they are codigested with other organic agricultural materials. Biogas end uses covered in the report are: municipal power generation; on-site heat and power production; and transportation applications.

Global markets are broken up into regions (i.e. North America, Europe, Asia, etc.). Details are provided on countries most active in the industry and include present market status, biogas production potential, and government regulations and incentives for the biogas industry. The market figures that researchers used for their projections are based on estimated sales revenues for the major players in the biogas industry in a particular year. These figures are projected in 2013 constant dollars, removing the inflation factor. Additional information in the report includes: technology overview, scope of the structure of the industry, and profiles of companies that play a key role in the industry.