

## HAWAI'I GAS - FROM WASTEWATER SLUDGE TO BIOGAS

### CASE STUDY



Partnering with:



#### THE CLIENT

Hawai'i Gas supplies gas energy to nearly every major market segment: residents, food service, military, hospitality, health care, education, government, agriculture and more. Hawai'i Gas has been providing the state of Hawaii with gas since 1904. Since this time, Hawai'i gas has installed gas pipeline infrastructure, built storage facilities with harbor access and has established a highly skilled workforce on every major island to serve the people of Hawai'i.

#### THE CHALLENGE

The innovative character of the Hawai'i gas has been recognized early on by the Pacific Coast Gas Association and was awarded the company for being 'years ahead of its time' in 1909. Hawai'i Gas has always focused on bringing cleaner, low-cost energy to the islands. The company offers a wide variety of energy sources. Next to the different sources of natural gas, the company offers solar power generated from a local solar farm.

Even though Hawai'i Gas already is a very progressive company when it comes to clean sources of energy, it was looking for a way to become even greener. In line with the state goal to generate 100% renewable energy by 2045, the organisation started investigating alternative sources of renewable energy to add to the portfolio to become independent of fossil fuels. Existing wastewater treatment plants and landfills produce biogas.

Some of this biogas is used onsite to provide energy for process heating, but most is flared to the atmosphere. This is where Hawaii Gas saw an opportunity.

#### THE SOLUTION

In partnership with the City and County of Honolulu, Hawaii Gas worked together to produce Renewable Natural Gas from the biogas produced at the wastewater treatment facility in West O'ahu. With the help of DMT's Carborex®MS, a biogas upgrading technology using membrane technology, Hawaii Gas can capture this biogas, clean it up to a predominantly methane stream and inject it into its existing distribution infrastructure to serve the general public.

Hawaii Gas is also exploring the use of large-scale biomass production to produce additional biogas and working with government and industry to develop new pathways for clean, reliable and cost-effective hydrogen fuel supplies.

Through DMT's membrane separation technology, biogas is collected, processed and injected into Hawaii Gas' O'ahu utility pipeline to provide energy for homes and businesses.

#### THE RESULT

The upgraded biogas from the wastewater treatment plant, RNG, is delivered safely and reliably through Hawai'i Gas' 1,100-mile underground utility pipeline, meaning that when winds are high and the power goes out, gas users can still cook and access hot water for

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sanitation. DMT's project was a critical piece to Hawai'i's resiliency plan for surviving natural disasters.

The Honouliuli Wastewater RNG Facility produces about 800,000 therms of energy per year, enough gas for 5,555 homes. By selling the biogas to Hawai'i Gas, the City

and County of Honolulu estimates they will generate approximately \$1.6 million of revenue per year. This \$5 million project harvests waste energy that was previously being flared off into the atmosphere.

## Hawai'i Renewable Energy Generation by Source

