

Power junk

How trash is turning on your electric lights (and more)



Trash tour: HPower facility Manager Robert Webster (right) explains power plant controls to Public Affairs staff (l to r) **Sam Nichols, Peter Rosegg, Lynn Bronaugh, Sharon Higa, and Liane Lum,** with Legal's **Steve Oppenheimer.**



Processed: Metal, dirt, sand, and glass are removed before solid waste is shredded, then burned.

The nondescript facility next to the coal hill belonging to the AES power plant looks like any other industrial processor/warehouse at Campbell Industrial Park. Trucks constantly come in and out, dumping their cargo into back-of-the-house warehouses. The trucks carry the most ordinary load—trash discarded by homes every day.

Since 1990, HECO has been buying that trash, but only after it's been converted to electricity by HPower, Honolulu's sole waste-to-energy plant. "Here, 24 hours a day, 365 days a year, ordinary household garbage is converted into environmentally sound, renewable electricity, saving landfill

space and 800,000 barrels of imported oil per year," says HPower Facility Manager Robert Webster. "Since we started operating, we've created six billion kwh of electricity from 10 million tons of garbage. The beauty of this operation is that we have no lack of fuel."

Robert is employed by Covanta Energy, which is one of the largest waste-to-energy operators worldwide. The HPower plant was originally built by the City & County of Honolulu in 1985 at a cost of \$181 million. The facility is officially owned by the Ford Motor Credit Company, the car giant's financial services arm, under a sale-and-lease-back arrangement. Covanta

has a contract to operate the plant, but the purchase power agreement with HECO is held by the City.



Maurene Bishop

Overseeing this somewhat complex arrangement is one of the responsibilities of **Maurene Bishop** of HECO's Purchase Power Division.

Maurene and System Operations appreciate HPower because it produces "firm" power. Unlike other renewable sources like sun, wind, and water, garbage (considered biomass like sugar cane and other agricultural resources) can be continuously and

The garbage business



Processing waste to burn as fuel for power production costs twice as much as using oil or coal. Covanta makes money through:

- **Tip fees:** Money the City pays to dispose of trash (called municipal solid waste) comes to about \$30 million/year. In July this year, HPower marked its 10 millionth ton of trash processed for electricity.
- **Metal recycling:** Metals are separated from the garbage and resold at about \$1 million/year.
- **Electricity sales:** In the 2004-2005 fiscal year, according to a *Hawaii Business* magazine article, Covanta made \$7 million, its share of the City's \$32 million in energy sales to HECO.

Trash cleanups

steadily burned to produce electricity. If other generating units within the HECO system go down, HPower will always have “refuse-derived fuel” and be one of the first generators up and running.

HPower is contracted to produce 46 MW of power, which translates to power or about 5% of Oahu’s electricity needs. The City and Covanta want to add a third boiler to the plant to increase reliability and its ability to burn more garbage.

“Right now, we’re at full capacity,” says Robert. “With a third boiler, which was included as part of the original design of the plant, we may be able to burn an additional 100,000 tons of garbage a year.”

Waste-to-energy is a reliable renewable resource that’s proven itself through the years.

The City’s Refuse Division, headed by Frank Doyle, is also advocating to build additional facilities (two boilers and an additional turbine generator) next to the plant to allow the disposal of 120,000 to 150,000 tons of additional waste a year, with an output of 60 to 90 MW. “That essentially would take care of most of the garbage on Oahu,” says Frank. Currently, HPower handles about 60% of the trash from Oahu households.

To put that plan into action, HPower requires a substantial amount of capital investment—more than \$100 million for a new generating system with mass-burn technology, which can process more plastics, and additional pollution controls; strict environmental rules govern emissions and the disposal of the plant’s waste product, ash.

Odors from the power plant, although quite noticeable within its premises, don’t spill out to the surrounding area. And during a recent tour, HECO’s Public Affairs’ staff noticed that the grounds and the entire facility were exceptionally clean, especially considering the plant’s processing product.

Waste-to-energy isn’t receiving as much attention these days as other alternative forms of energy. But it’s a reliable resource that’s proven itself over decades.

HECO volunteers have been triple busy these past couple of months cleaning up Oahu’s waterfronts. The **Legal/Land and Rights of Way Department** spear-headed clearing a section of Bellows Beach and the Pearl Harbor bike path from Neal Blaisdell Park to the Waiau Power Plant (a joint project with the Navy).

The **Environmental Department** organized HECO’s annual “Get the Drift and Bag It,” part of a national beach cleanup effort, to collect a record amount of trash from Kahe and Tracks beaches. “HECO employees, and their families and friends, put an ocean of work into this year’s effort. As the Environmental Department, we want to ensure that Hawaii’s beaches are preserved for future generations,” says **Mike Carberry**, Get the Drift organizer.



Clearing land and ocean
(clockwise from top):

- Bagging it in front of Kahe Power Plant.
- Environmentally correct **Donn Fukuda** gets his shave ice from “Get the Drift’s” solar-powered machine.
- Legal’s **Lester Goo** cleans up mangrove at the bike path.
- More lawyers and friends clear invasive plants at Bellows.