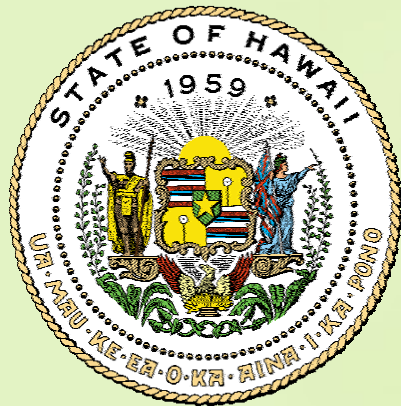


FROM POLLUTION TO POWER: TRANSFORMING MARINE DEBRIS TO ENERGY

**For the Council of State Governments-West Annual Meeting
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**By the State of Hawaii
Department of Business, Economic Development,
and Tourism**



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Derelict Fishing Gear



- ✿ Derelict fishing gear is a deadly trap in the North Pacific. Much of it drifts to the Northwestern Hawaiian Islands where it becomes “a killing machine.” The endangered Hawaiian Monk Seal pictured is one of thousands of marine animals entangled each year.

Loose Netting



- ✿ A coalition of federal agencies and the University of Hawaii secured federal funding for divers to cut lose net snagged on the Northwestern Hawaiian Islands reefs. The snagged nets “bulldoze” the reefs in addition to killing wildlife.

Harvested netting



- ✿ The harvested net was initially transported to Honolulu where it added to an already overburdened landfill.

HMR processes the netting



- ✿ The Department of Business, Economic Development, and Tourism (DBEDT) worked out an agreement with Hawaii Metal Recycling (HMR) to voluntarily process the net. The photo shows an HMR truck loading net from a vessel newly arrived from the Northwestern Hawaiian Islands.

HMR transportation to baseyard



- ✿ HMR trucks transport the tangled net to HMR's baseyard.

Specialized cutting equipment



- ✿ At the HMR baseyard, specialized equipment cuts the mountains of net into pieces small enough to flow into the conveyor belts of H-POWER, Honolulu's garbage-to-energy plant.

Cutting netting is very difficult



- ✿ Although the cutting equipment is designed to chop up auto bodies, cutting the tangled net proved much more difficult. Brand-new blades must be used to cut through layers of hemp, nylon, and plastic.

Jaws of recycling



- ✿ Operating the HMR cutting machine costs \$250 per hour. HMR has contributed more than \$50,000 in labor and equipment to the program.

Net transferred to H-POWER



- ✿ The cut up net is transported in HMR trucks to H-POWER where it is burned to provide electricity for 42 homes for a year. H-POWER, a City & County of Honolulu facility, waives the \$75 per ton tipping fee, burning the net for free. In this way, the City has contributed more than \$20,000 to the program.

H-POWER uses the netting



- ✿ H-POWER's conveyor belts, right, can only accommodate smaller sizes of fibrous materials such as net. Large sizes snag and shut down the operation.

Asahi TV features the program



- ✿ The project caught the attention of Asahi Television Company, Japan's third-largest TV Company. The TV crew is shown with James Banigan, HMR President.

TV documentary on the program



- ✿ The resulting 30-minute documentary, “Plastic Ocean,” was seen by 11 million Japanese, the largest audience ever to view a documentary in Japan. The photo shows Program Manager Howard Wiig being interviewed.

Marine scientists see net harvesting up close



- ✿ DBEDT presented a paper on the net harvesting at the Asia Pacific Economic Cooperation Conference (APEC) in Honolulu. Conference participants requested a tour. Marine scientists throughout the Pacific Basin received a hands-on demonstration at the HMR baseyard.

Follow-up research paper



- ✿ The project led to the presentation of a follow-on paper entitled, “A Cost Comparison of Various Methods of retrieving Derelict Fishing Gear,” to the Pacific Congress on Marine Science and Technology. It is tentatively scheduled for publication in *Recent Advances in Marine Science & Technology, 2004*. The paper’s intent is to identify the best use of limited funds in retrieving nets before they reach land to become “killing machines.”