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# Major boost puts Honolulu Seawater Air Conditioning LLC halfway to its target

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It's been a little more than a decade since seawater-cooled air conditioning of Downtown office buildings was proposed, billed then as one of the largest energy efficiency projects in Hawaii's history. Not much has happened—until now.

The **Honolulu Seawater Air Conditioning** LLC's \$250 million project recently got a major boost with a new majority owner in **eBay** founder [Pierre Omidyar](#)'s impact investment firm Ulupono Initiative. It has signed some major customers, too, including The Queen's Medical Center, the largest hospital in Hawaii, as well as an as-yet-to-be-named Downtown Honolulu office building the project says it will be able to identify "very soon." These customers, along with **Hawaiian Electric Co., Finance Factors** Ltd., First Hawaiian Center, Alakea Corporate Tower, One Waterfront Towers and the Prince Jonah Kuhio Kalaniana'ole Federal Building and Courthouse (its first federal government customer), brings HSWAC about halfway to its informal target for customers.

When completed, the system will pump cold seawater from more than four miles offshore into a cooling station behind the former Gold Bond Building on Ala Moana Boulevard. The seawater will pass through heat exchangers, cooling off freshwater circulating in a closed pipeline system that, in turn, will cool downtown buildings. Construction will include the installation of 15,000 feet of pipeline from the cooling station to Downtown Honolulu, creating about 1,000 construction jobs and a dozen or so permanent positions.

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- [Customers cite environmental, financial benefits from Seawater A/C](#)
- [Seawater A/C contractors stay on board despite facing long delays](#)

The company estimates that, on average, customers could save anywhere from 5 percent to 15 percent on their annual cooling costs. It is in the process of finalizing its permits and hopes to start construction in March 2017 and be completed in about 18 to 20 months.

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## Slow start

[Eric Masutomi](#), president and CEO of Honolulu Seawater A/C, who took over the company's top post in 2012, is quick to point out that the project has taken a lot longer than anyone envisioned.

"But that's the penalty of being first, not first in the technology, but first in Hawaii applying this technology," the former vice president of planning for **Outrigger Enterprises Group** told PBN in an exclusive interview at the firm's Downtown Honolulu office. "And frankly, we underestimated the difficulty we are encountering in standard permitting, sales and financing approaches."

The former director of planning for the **Hawaii Community Development Authority** noted that launching what is essentially a new utility turned out to be more complex and time consuming than originally thought.

"The reality is, we're talking about a privately installed utility to be put in place within the streets of Honolulu," Masutomi

said. "We are dependent on the use of public right-of-ways for our system. If you recognize that, we need to secure necessary permits and easements to operate in those right-of-ways. So the city and state agencies are not very well-experienced in dealing with that on that scale, so the entire review process is turned on its head."

He estimates that the state and city permitting has taken up to three times longer than they expected.

"Would that have affected our decision to go or no go?" Masutomi asked. "I don't think so, but what we would've done is laid out a more pragmatic business plan. At the federal level, the [environmental impact statement] was effectively initiated back in 2009, but if you think about it, that's a long time."

The project, he said, was the first of its kind for federal regulators, too, so their review of it was also a struggle.

"They went through two reviews on it, so it hasn't been easy on regulators," Masutomi said. "I would like to say, it's been a learning experience for both of us. Our next project, damn, it's going to fly through, or somebody else's project."

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## Ulupono Initiative

Ulupono Initiative began its due diligence on the Honolulu Seawater A/C project in 2011, shortly after [Murray Clay](#), managing partner, joined the firm.

It actually was one of the first projects the investment firm looked into funding.

"The team had previous contact with them before my arrival, so we have been aware of the project for some time," Clay told PBN. "We spent two years of due diligence on this project before investing. It probably aggravated Eric a little because we took that long."

But it needed to make sure the project made sense from an environmental and financial standpoint, able to stand on its own. Ulupono Initiative's investment started in 2013, followed by more funding in April 2014 and then putting in place more ongoing funding starting in the fall of 2014.

Today, Ulupono is the majority investor in the project at 62 percent. Masutomi declined to specify what that 62 percent amounts to.

For Clay, the next hurdle for the project is securing the customer contracts that will allow the project to move forward.

"Because even if it makes financial and environmental sense, until people see something up and working in Hawaii, they're a little reluctant to take a project seriously," he said. "After we got the basic financials and we were comfortable with the environmental side, we had to think about the contract side. If it can't get done, you generally shouldn't get involved in a project."

But Ulupono's involvement, Murray says, is not just a casual thing, especially when talking about the investments.

"We are really committed to this," he said. "We felt it's a very important infrastructure project for Hawaii. There will be jobs, construction spending. We are committed to get this thing done."

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## Other seawater projects

In the U.S., there are no commercial scale district cooling projects that utilize seawater, although there is a small project on the Big Island that has been running for decades.

"The technology works and it's proven," Clay said. "It's interesting that [Hawaii] pioneered it but has not profited from it [yet]."

When the project was first thought of, its developers thought it was going to be the first subtropical project of its kind, but since then, other areas have passed them by in building seawater projects, Masutomi said.

Such is the case in the Bahamas, which has already started construction on a system that will service a resort there. Tahiti also has a seawater project planned and a hotel in Bora Bora has a small system in the works, as does Aruba.

Honolulu Seawater A/C's own personnel has direct experience in developing district cooling projects in the United States and Europe, including Europe's largest seawater air conditioning project in Stockholm, Sweden, which handles approximately 80,000 tons of air conditioning load and continues to expand, according to its website.

"No customer has said 'no,' based on their understanding of the system," Masutomi said. "Most are taking a wait-and-see approach."

California-based Douglas Emmett Inc., one of the largest office property owners in Downtown Honolulu, is one of these firms undertaking this approach. Signing up Douglas Emmett's buildings in Downtown Honolulu, including Bishop Square, would equate to about 4,000 tons of capacity.

Masutomi recently traveled to the Golden State to visit with executives of the Santa Monica-based real estate investment trust to make a pitch for the seawater project.

One of the challenges facing Honolulu Seawater A/C when it comes to Douglas Emmett is the fact that, about five years ago, the trust went through a bad experience with a district cooling system in California, he said.

"First we had to overcome that, which I think we have," Masutomi said. "When I got actively involved with them, they just asked for our patience. We think with our recent flurry of sign-ups, it's a good time to bring them back into the fold."

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## Selling the utility

[Greg Wong](#), director of customer service for Honolulu Seawater A/C, told PBN that it's a learning process for everyone, and thus takes a long time for people to understand what its delivering.

"It's just water, right?" he asked. "Part of the process is understanding how you get A/C into the building. It's the trailblazer phenomenon. If you're a building owner, A/C is not a subject you spend a lot of time thinking about."

However, he noted, cities that have district cooling systems, like Toronto, Minneapolis, Chicago or New York, are familiar with those types of systems.

"Here in Hawaii, being a new introduction, even for the most progressive businesses, like **First Hawaiian Bank—frankly**, they did it on the financials, but also because they believed in the product and spent a considerable [amount of time] on due diligence on it, and that takes time and money to investigate," Wong said.

Honolulu Seawater A/C itself spent a considerable amount of time doing due diligence for First Hawaiian Bank, but at the end of the day, the Honolulu-based bank had to make the final decision, he said.

"Most other building owners, frankly, are not interested in doing that," Wong said. "They don't have the time. It's a building block process. We have to go into the buildings, understand their systems and work with them."

Ray Starling, program director for **Hawaii Energy**, the state's conservation and efficiency program, thinks the project still has a shot at being developed, especially with Ulupono Initiatives' increased investment.

"There are a lot of us around who are hopeful they can get it over the hump," he told PBN. "It's a big project and it takes a lot of planning. It's a good thing and a good thing for Hawaii."

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## CLOSER LOOK

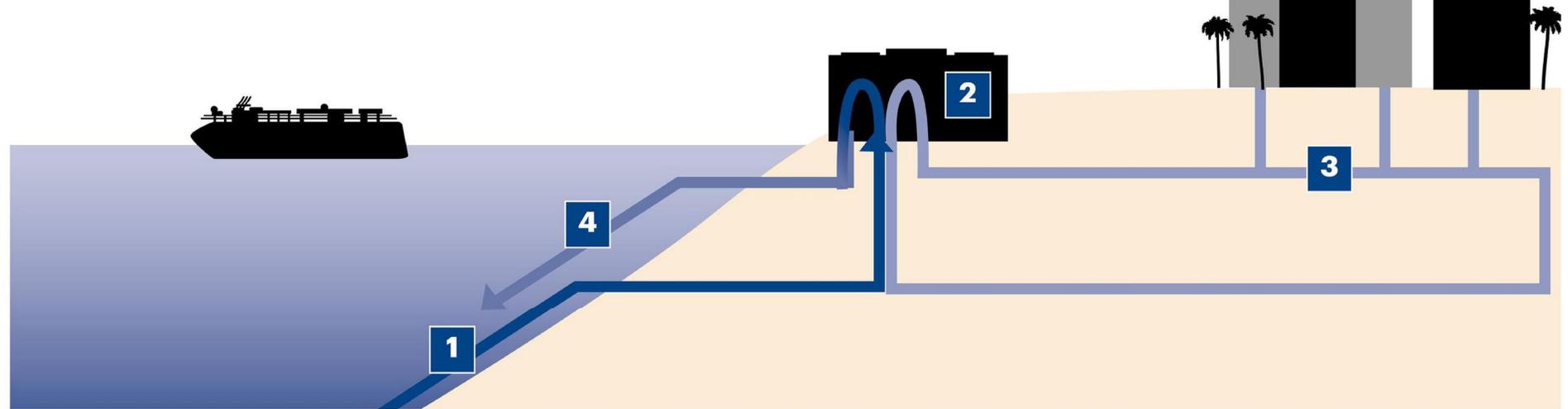
Other places seawater cooling systems would work in Hawaii:

- Downtown Honolulu
- Waikiki (project proposed)
- Kakaako (project talks have begun)
- Ko Olina
- Pearl Harbor
- Poipu on Kauai
- Kahului on Maui

Seawater A/C: How it works

## HOW IT WORKS

A typical seawater air-conditioning district cooling system is quite simple and can be explained in four parts.



**1.** Pumps bring up cold (44 - 45 degrees Fahrenheit) seawater from a depth of more than 1,700 feet — and a distance of four miles from the Kakaako shoreline — through an intake pipeline to a cooling station on shore.

**2.** The cold seawater passes through a heat exchanger at the cooling station, extracting heat from freshwater that circulates in its own closed-loop pipeline system. The heat exchangers ensure that seawater and the freshwater delivered to the buildings never mix. Chillers in the cooling station supplement the seawater's cooling effect to maintain a consistent 44 degrees Fahrenheit for the chilled fresh water distributed to the customers' buildings.

**3.** The chilled fresh water travels through underground pipes to each building's existing chilled-water air conditioning system.

**4.** The slightly warmed seawater is returned in an environmentally safe manner back to the ocean by releasing it through a diffuser located at a depth of 325 to 425 feet.

SOURCE: HONOLULU SEAWATER AIR CONDITIONING LLC