

From Emergency To Entitlement

The case of the sandbag revetment spanning five lots, and nearly 20 years, along the beach in Ha‘ena, Kaua‘i, is a textbook example of how something promised as a one-off, temporary fix becomes, over the years, so entrenched that action by any state or county authority to remove it seems to grow dimmer by the day.

Of the three agencies that one might expect to exercise some enforcement powers, not one is stepping forward. All this could have been avoided had the owners lived up to permit terms, had the county enforced its permit conditions, and had the state followed up with enforcement of its own Conservation District and state land regulations.

Nearly 20 Years After ‘Emergency,’ Sandbags Are Still in Place at Ha‘ena

The owners of five beachfront lots in scenic Ha‘ena, Kaua‘i, have had it easy for too long at the expense of the public and the environment, and it’s time government agencies ordered the removal of the 400-foot-long emergency sandbag revetment installed nearly 20 years ago to protect their properties. That’s according to longtime area residents Caren Diamond and Chipper Wichman, who wrote the Department of Land and Natural Resources’ Office of Conservation and Coastal Lands on April 12, asking the state agency to take action.

In November 1996, high surf ate up to the very edges of homes on two of the lots, pulling large palm trees and chunks of lawn onto the beach and creating a 25-foot tall cliff. The following month, Kaua‘i County and the DLNR issued emergency permits to allow the building of a temporary revetment.

“It was never intended to be a structure that would be kept in place for nearly two decades yet it remains in place today and is compromising the integrity of the dune, the near-shore marine environment and the county’s nearly adjacent beach park. ... In short, this has become a serious environmental problem — a problem that should have been rectified many years ago,” Diamond and Wichman wrote.

In their letter, they include photos of the revetment blocking lateral public access and of sandbag pieces littering the beach, something they claim has occurred regularly over the past several years.

“While removing the revetment could have long-term stability consequences for the existing homes, all of the current owners bought this property knowing that shoreline erosion at this location was a

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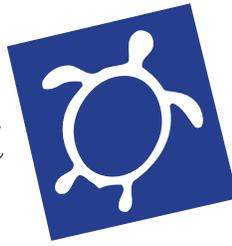
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Sandbag revetment in Ha‘ena, Kaua‘i.



NEW AND NOTEWORTHY

More Fences Cut: In June, the Department of Land and Natural Resources disclosed that vandals had cut openings in two miles of fences around Pu'u Maka'ala Natural Area Reserve on the Big Island. According to a DLNR press release, "vandals had cut through multiple sections of fence at intervals of 5 to 10 meters, top to bottom." The cost to repair the fencing was put at several hundreds of thousands of dollars, not including the cost of removing any animals that may have gained access to the reserve through the cut fence.

But the hardworking vandals didn't stop there.

Around 2.4 miles of fencing at the nearby Ola'a Tract of Hawai'i Volcanoes National Park was also cut. According to park spokesperson Jessica Ferracane, temporary repairs have been made, "but the whole length will need to be replaced and will cost an estimated \$142,000."



PHOTOS: HAVO

Fences cut at Hawai'i Volcanoes National Park.

Suzanne Case, DLNR director, said, "Whatever point these vandals think they're making, they need to realize that they and every other taxpayer in Hawai'i, ultimately ends up paying for the replacement of this fencing. Additionally, significant staff time will be spent to repair the damage which could take several months and takes staff away from other scheduled projects and regular duties."

Fences in both units have been put up to protect rare and endangered populations of native Hawaiian plants from damage from pigs. Many hunters on the Big Island have made no secret of their dislike of the fenced areas, claiming state and federal governments are reducing their hunting opportunities.

Bigeye Limit Nears: The Honolulu longline fleet is fast approaching its bigeye tuna catch limit set by the Western and Central Pacific Commission. As of late July, the fleet had already caught 3,379 metric tons, or 96.5 percent of the allowable catch. The National Marine Fisheries Service's Pacific Islands Regional Office anticipated the fleet would reach its WCPFC limit on August 5.

On July 23, NMFS published in the *Federal Register* a final rule to implement the 2015 quota. The rule was not unexpected – but it does come surprisingly late in the year, given that the quota is almost met. The limit has been known since the WCPFC last met in December 2014.

Because of the lateness of the hour, NMFS is waiving any period for public comment, since "the amount of U.S. longline bigeye tuna catch ... to date in 2015 has been greater than in prior years, and it is critical that NMFS publish the catch limit for 2015 as soon as possible to ensure that it is not exceeded," the FR notice states.

"Delaying this rule to allow for advance notice and public comment would bring a substantial risk that more than 3,502 mt of bigeye tuna would be caught by U.S. longline fisheries ... constituting non-compliance by the United States with respect to the longline bigeye tuna catch limit provisions" adopted by the international commission, the notice states.

In recent years, NMFS has allowed the Hawai'i Longline Association to purchase a part of a quota NMFS has given to the U.S. territories, and in this manner has allowed the fleet to add as much as 1,000 tons to their annual WCPFC quota for each territory with which they have an agreement. As of late July, NMFS had yet to publish a rule to allow this to occur in 2015. Mike Tosatto, NMFS regional administrator, said his staff was still working on this.

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Quote of the Month

"I don't know what they expect the government to do when the government has to follow the rule of law."

— Chris Yuen, Land Board

Revetment from page 1

major issue and that the temporary revetment would have to be removed and that the permanent hardening of the shoreline would not be allowed as it is in conflict with the shoreline management policy of both the state of Hawai'i and the County of Kaua'i," they wrote.

Last year, the landowners proposed that the revetment be allowed to stay permanently, but so far, no permits to achieve that have been applied for, let alone granted. With the Kaua'i Planning Department's denial earlier this year of the landowners' request for an extension of time to allow the temporary sandbags to remain, the revetment appears poised for removal. But given the pace at which the county has moved to enforce those permit conditions, it could be years before anything is done.

The Emergency

In December 1996, Dee Crowell, county Planning Director at the time, authorized an emergency Special Management Area (SMA) permit and shoreline setback variance, and the DLNR Land Division issued an emergency right-of-entry permit to allow for the construction of the revetment. (No state Conservation District Use Permit, or CDUP, was issued, however.)

In his permit approval letter to one of the landowners, Crowell noted that state law allows variances to be granted for "private improvements within the Shoreline Setback Area that will neither adversely affect beach processes, or artificially fix the shoreline, provided that hardship will result if the improvements are not allowed."

"The proposed measures are removable and temporary and do not represent an irreversible fixing of the shoreline," he wrote.

"The county has made their move."

— Sam Lemmo, OCCL

Included in the SMA permit were a number of conditions that the landowners would appear to have violated in the years that followed. Condition 2 required the revetment to be placed at the bottom of a slope fronting the homes, "as far mauka as possible, but in no case shall the structure extend beyond the shoreline as defined in [Hawai'i Revised Statutes] Chapter 205A."

Condition 5 stated that the protection measures were to be temporary until acceptable permanent measures could be approved through the normal permitting process. Under Condition 7, the landowners were responsible for inspecting and maintain-

Ha'ena Homeowners

All five lots protected by the emergency sandbag revetment in 1997 have been sold since then, some multiple times. The following is a description of the current owners and the status of their properties. (Market values are taken from county tax assessments.)

Parcel 23

Neal Norman 2004 Trust,
Melissa Norman 2004 Trust
Kilauea, HI
Tax classification: Homestead
House built in 1996
2015 market value: \$2,858,100

Parcel 24 (protected by 1996 permit)

Carroll-Downs Family Trust
Saratoga, CA
House built in 1941/effective year 1963
Tax classification: Residential Investor
2015 market value: \$2,525,900

Parcel 25

Matthew and Judith E. Malerich Trust
Bakersfield, CA
Building underway

Tax classification: Conservation
2015 market value: \$1,891,800
2009 CDUP for home, 50-foot setback

Parcel 26 (protected by 1996 permit)

Zibo LLC
Prescott, AZ
House built in 1973
Tax classification: Vacation Rental
2015 market value: \$2,943,300

Parcel 27

Ohanahale, LLC
Hailey, ID
House built in 2013
Tax classification: Residential Investor
2015 market value: \$3,281,900
2008 CDUP for home, 80-foot setback

ing the revetment and for immediately implementing corrective actions should it adversely affect the shoreline or SMA resources. And under Condition 8, within one year of the emergency permit's approval, the landowners were to have submitted a professional assessment of the revetment's effectiveness, impacts to the shoreline, and recommendations for additional action.

After the revetment was installed in early 1997, however, no report was forthcoming and none of the landowners appeared to have made an effort to seek a permanent solution. In fact, one by one, between 1999 and 2009, they sold their lots, pocketing millions of dollars in some cases.

preserve it and started taking action.

The last sand-pushing event in 2006 "really was major," says Diamond. "We had some sand buildup and they took all of it."

So the following year, when one of the new landowners, the Catherine M. Barness Trust, sought a shoreline certification for the construction of a new house, Ha'ena residents Beau Blair and Barbara Robeson accompanied DLNR and county staff on an inspection of the revetment. What they found was that an illegal irrigation system to foster naupaka growth had been installed over the revetment, seaward of the shoreline. It was eventually removed.

Then in January 2008, Diamond and Blair appealed the DLNR's shoreline certification, which set the shoreline at the top of the bluff just above the revetment. They argued that the shoreline was incorrect "due to the presence of a sandbag revetment and that failing portions of the revetment constitutes encroachments or violations that prohibit the certification of a shoreline."

Investigating Diamond's and Blair's claims, Morris Atta, DLNR Land Division administrator at the time, wrote Kaua'i planning director Ian Costa on May 27, 2008, inquiring about the status of the county permits for the revetment.

"The Department is concerned that the subject structure has surpassed the temporary emergency nature and is concerned with the adherence to conditions

A Turning Point

By 2007, some Ha'ena residents were fed up with the revetment and the efforts to

2, 5, and 7 of the emergency SMA related to the shoreline and the temporary nature of the structure. Based on this, the department concludes that the revetment is now unauthorized, due to the expiration of the temporary approval granted by the emergency SMA permit.”

Atta asked the county to provide a determination on the validity of the revetment and the emergency SMA permit. Otherwise, the DLNR would presume the revetment was unauthorized.

While the Land Division awaited the county's response, the OCCL informed the landowners on July 28, 2008, that it was denying their request for another round of sand pushing. The agency noted that “sand pushing/scraping can destabilize the beach profile and actually increase beach loss and coastal land loss. This can, in some cases increase the steepness of the beach profile and accelerate erosion processes.”

Costa's response to Atta on July 30 effectively put the brakes on any effort by DLNR staff to take action regarding the revetment.

“Please be advised the Planning Department's position is that the referenced permits are and remain valid until a formal notice to rescind or revoke the permits is issued by our Department,” Costa wrote.

He assured Atta that the Planning Department intended to inform the landowners that conditions regarding efforts to seek a permanent solution and to monitor and assess the impacts of the revetment must be addressed. Costa did, indeed follow up with a letter to the landowners two weeks later, giving them until the end of August to respond.

“We had some sand buildup and they took all of it.” — **Caren Diamond**

Given the county's position that the emergency SMA permit and shoreline setback variance were still in effect, the DLNR ultimately granted the shoreline certification after finding that Diamond and Blair lacked standing to appeal.

Buying Time

In November 2008, Sharon Carroll and Robert Downs, owners of one of the two homes nearly destroyed by the 1996 event, wrote Costa, asking for more time to fulfill the Planning Department's request for compliance.

“[W]e believe that our responses to your inquiries and our efforts to address the concerns you raise should be guided by a more specific and complete assessment

of the effectiveness of the sandbags and any impacts on the shoreline and coastal environment. We intend to develop this information with the assistance of qualified professionals,” they wrote on behalf of all five landowners.

They went on to say that they had retained Elaine Tamaye of EKNA Services, Inc., and Ron Wagner, a professional surveyor, to assess what effects the revetment may have had on beach processes. Because beach measurements would need to be taken at various time throughout the year, they asked for an extension to April 30, 2009, to meet Condition 8.

Based on the results, the landowners could better evaluate how to deal with conditions regarding long-term protection measures and the required permits, they wrote.

Costa granted them an extension until June 30, 2009. That day came and went, and over the next couple of years, without any further extensions from the county, the landowners continued with their beach studies. At the same time, the Board of Land and Natural Resources granted two CDUPs to two of the landowners who wanted to build homes on their vacant lots. Although the Office of Conservation and Coastal Lands urged the landowners in the most recent CDUP case to remove the revetment or apply for a CDUP for a permanent shore protection, the agency ultimately supported the issuance of a permit for a house.

Both houses are set back far from the shoreline and probably won't be adversely affected if or when the sandbag revetment is removed. What's more, both CDUPs prohibit any future shoreline hardening,

including the use of sandbags, to protect the homes.

Carroll and Downs provided the county with an interim beach monitoring report in late 2009, which suggested that the revetment was not harming the beach. They also stated that the revetment did not impede lateral access during the monitoring period. But according to Jim O'Connell of the University of Hawai'i's Sea Grant program on Kaua'i, who reviewed their submittals at the county's behest, their claims needed more verification.

For one thing, Downs' statement that in most years, the highest wash of the waves “barely reaches or falls short of the visible sandbags” was contradicted by

O'Connell's firsthand experiences.

“Unfortunately, I was caught in the storm wave swash/uprush at the toe of the revetment during the December high surf,” he wrote, adding in his report to the county, which included photos that “show evidence that waves have in fact swashed up to the bags more than likely impeding access during these high wave events.”

He recommended that the Ha'ena Beach Park lifeguards be questioned about the



Erosion in Ha'ena following a high surf event in November 1996. Photo courtesy of Caren Diamond.

frequency and importance of high wave events and their impacts on safe access along the shore.

With regard to the revetment's impact on the beach itself, O'Connell wrote, “Armoring of this particular dune ... obviously prohibits some volume of sand from feeding the beach which otherwise would be a continual source of sand.”

He concluded, “While a revetment may provide temporary protection to the buildings, landward relocation of the building is the only short-term viable alternative that avoids adverse impacts to the beach, public lateral access, habitat, and the general marine environment.”

Despite his recommendation, the county held off enforcing the SMA permit conditions while the landowners continued their beach monitoring for a few more years.

It wasn't until January 2014, five years after the county had initially sought compliance with the emergency SMA, that Downs and Carroll submitted a final monitoring report by EKNA. In a letter to current planning director Michael

Dahilig, they wrote that Tamaye had found that over a 45-month period of monitoring, the beach fronting the revetment had actually accreted almost 15,000 cubic yards of sand. EKNA's final report concluded that "the sandbag revetment does not have any apparent influence on the beach processes."

Given that, Carroll and Downs proposed in a June 16, 2014 letter to Dahilig that, as a permanent solution, naupaka be allowed to grow over the revetment down to where the sand covers the bags, something they apparently tried to do, without authorization, years ago.

"The survey shows that this line has remained the same since 2005 until this year and that the sand is returning to this level in the current year. This will protect the bags from sun damage and vandalism. Also, palm roots are infiltrating the bags and holding them and the slope in place," they wrote.

They also asked, again, that the sandbags be allowed to stay a little longer, at

if the revetment were removed, but their lots are deep enough that retreat is possible.

Dahilig also noted that the DLNR had received complaints of wayward sandbags and had ordered the landowners to remove them.

"This department will not entertain any permit application until this matter is first resolved," he wrote.

What's Next?

"The county has made their move," by basically telling the landowners to take the revetment out or apply for a permit, says OCCL administrator Sam Lemmo. But since Dahilig's January letter, neither the county nor the landowners have taken any action. Planning Department staffer Jody Galinato stated in an email that "no further correspondence has been received nor have any of the applicants scheduled a meeting with the department to discuss this issue."

Downs says he is trying to coordinate with the other landowners on an SMA

ment on the application and would likely also require the landowners to apply for a CDUP, he says.

It seems unlikely Lemmo would recommend a revetment as a permanent solution. Any such structure would eventually impact beach width, especially with sea level increasing, he says.

Still, "it's in everybody's interest to find an amicable, long-term solution. ... It's the same problem we're facing at Sunset and Kammies [two beach areas on O'ahu's North Shore]. How do we find a way to protect the beach assets?" he says.

Although the temporary revetment is already wholly within the Conservation District, Lemmo says he doesn't feel he has the legal ability to enforce at this time.

And neither does the DLNR's Land Division, it seems. The division often requires landowners to obtain a perpetual, non-exclusive easement for any structures encroaching onto state property, but according to DLNR land agent Ian Hirokawa, his division would only get involved in this case if any of the landowners needed a new shoreline certification (as they would if they applied for an SMA) or if the OCCL determined that the structure poses a problem.

If the revetment should ever become unpermitted, Hirokawa says, his agency would be concerned with it remaining on state land.

— *Teresa Dawson*

*I was caught in the storm wave swash/
uprush at the toe of the revetment during the
December high surf.*

— *Jim O'Connell*

least until the end of 2015.

Six months after that request, Dahilig shot them down.

"Based on the amount of time that has lapsed since granting the Emergency SMA Permit, the department is unable to accommodate your time extension request," he wrote.

He stated that their proposed solution would require a new SMA permit and "needs to be supported with documentation and shoreline studies."

In addition, the proposal must meet the requirements of Ordinance No. 979, the county's recently adopted shoreline setback legislation. Under the ordinance, a shoreline setback variance for a private structure that artificially fixes the shoreline may only be allowed under very strict circumstances. Specifically, the county Planning Commission must find that erosion would likely cause severe hardship to the applicant if the improvements are denied "and all alternative erosion control measures, including retreat, have been considered."

Given that two of the homes are set back far from the shoreline, it's unlikely that they would qualify for a variance to keep the revetment in place. Only two of the homes, those that were at risk in 1996, would be immediately vulnerable to erosion

permit application. "Removing the bags is not an option," he says.

Although the county has refused to give any more time to the landowners to comply with the emergency permit, it's unclear whether that means the permit itself has been revoked. When asked when the emergency SMA permit expires/expired, Galinato simply restated the permit's conditions and stopped short of stating that the failure to meet those conditions — particularly Condition 8, which was to be met one year after the permit was issued — invalidated the permit.

For the DLNR's part, Lemmo says he can't help what did or didn't happen at his agency in the past, but he can help advance the discussion of what's to happen next.

"I told Caren I would support the county if they told the homeowners to remove the bags and provide some soft solutions like we did for the North Shore [of O'ahu]," he says. "If they ended up removing the bags, we would maybe allow some sand pushing."

"If you took away the protection, the two people [whose homes are at the revetment's edge] could have a problem very quickly," Lemmo says.

Should the county decide to entertain an SMA permit, the OCCL would com-



For Further Reading

We have reported extensively over the years on shoreline issues in North Kaua'i. For more on this subject, see the following articles, all of which are available at environment-hawaii.org.

"High Court Sides with Activists in Kaua'i Shoreline Certification Case," March 2014

"Efforts to Clear Encroaching Vegetation Ramp Up Along Kaua'i's North Shore," July 2013;

"Kaua'i Shoreline Certification Case Hinges on Credibility of Evidence," July 2013;

"Supreme Court Slaps Down DLNR, Land Board on Shoreline Certifications," December 2006.

BOARD TALK

Ala Wai Developer Dodges Lease Termination Again

If Honey Bee USA, Inc., fails to secure a new funding partner before the Board of Land and Natural Resources meets later this month, company representatives have said they'll walk away from their lease to develop the Ala Wai boat harbor.

On July 10, the DLNR's Division of Boating and Ocean Recreation had recommended that the Land Board cancel the lease due to the company's failure to pay rent, post a performance bond, and remain free of encumbrances. The division had first sought termination in March for the same reasons, but deferred with the expectation that Honey Bee would cure its defaults and find the necessary financing to meet its development goals, which include a boat repair facility, a fuel dock, wedding chapels, a commercial center, and a world-class kayak training facility.

Honey Bee eventually did pay its back rent of more than \$400,000, but the company immediately fell into arrears again. The funding partner Honey Bee had identified, Next Realty, backed out "and we still don't have a bond and encumbrances aren't cleared up," DOBOR administrator Ed Underwood told the board on July 10.

Underwood acknowledged that Honey Bee had found a new potential equity partner and lender for the project, but did not back off his recommendation that the board terminate the lease.

Honey Bee consultant Deron Akiona

asked the Land Board to defer its vote until the end of August and blamed the loss of Next Realty in large part on the lease terms giving the state as much as 50 percent of any profits on the sale of the development.

Those terms have "been an issue with every lender we've spoken with, with good reason," Akiona said.

Even so, ICON Commercial Lending tentatively agreed in June to provide \$35 million in construction funding in exchange for a 50 percent equity interest in Honey Bee. Should ICON back out as well, so would Honey Bee, Akiona said.

"If ICON does not come up with this funding by your August meeting, I will be more than willing to come to this board to pull the lease," he said. "I've been before four [Land] boards and four directors. ... My patience is kind of run down."

He noted that Honey Bee has paid the DLNR \$1.6 million in development fees and lease rent — "\$1 million more than the state would have gotten under the previous lease." What's more, he added, the company spent some \$3.5 million in planning and improving the property, largely to accommodate DOBOR's requirements that the development include a boat repair facility.

DLNR staffer Keith Chun, who is helping DOBOR oversee the lease, told the Land Board that the requirement to build a boat repair yard — a low-revenue use — forces other tenants that may oc-

copy the development to subsidize it.

"If the lease is terminated, I would seriously reconsider that kind of low-revenue use in that part of Waikiki," Chun said.

Under the current language of the lease, Honey Bee performed as required, but then got stuck with financial problems when its principal pulled out, Chun continued.

"It is what it is," he said.

Chun seemed amenable to giving Honey Bee until August to secure its financing, but said he needed more information to vet ICON, which would eventually have to be added as a co-lessee. "I would want at a minimum a detailed history of ICON, their experience, what other projects they completed," he said.

Some of Chun's requirements, such as requiring ICON to put its first round of funding — \$12 million — into escrow by August 1, seemed too strict for some Land Board members.

"I don't think we should be putting a whole bunch of constraints on before they even commit and scare them away," said board member Stanley Roehrig.

Akiona stated that ICON paying \$12 million in escrow by August 1 was simply not going to happen.

In the end, the Land Board agreed to give Honey Bee one last chance and deferred the matter until its second meeting in August.

Before the vote, Underwood said that should Honey Bee's project not pan out, DOBOR would want to seek new development proposals for the old fuel dock, boat repair facility, and adjacent lands.

"Taking it to one entity is the way to go," he said.

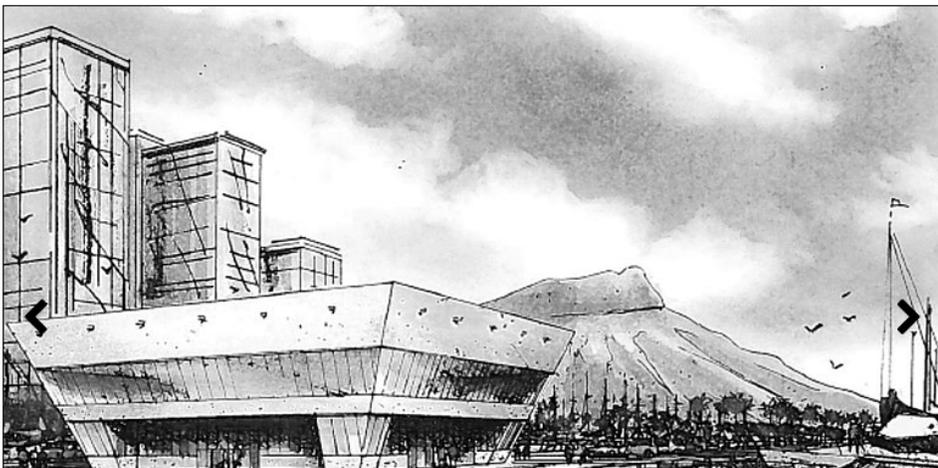
(For more information on this, see the Ala Wai item in our April 2015 Board Talk.)



Permit Allows Rare Electrofishing

To allow the DLNR's Division of Aquatic Resources to learn more about how electrofishing can best be used as a resource management tool, the Land Board granted a special use permit to researcher Michael Blum of Tulane University, who proposes to shock portions of about a dozen streams on O'ahu that are infested with invasive fish species.

"It's not been used very often in



An artist's rendering of the proposed Honey Bee development, Waikiki Landing.

Hawai'i. We would like more information on the effects of the tool for management purposes," DAR acting administrator Alton Miyasaka told the Land Board at its June 26 meeting.

Years ago, Blum requested a permit to use electrofishing to assess native stream fish populations, but was denied and was forced to hand-net the fish. The only other electrofishing permit the Land Board has granted was to Robert Kinzie, who planned to test it in a wetland area as a potential way to control invasive frogs and fish.

In that case, Kinzie only managed to kill cane toads because the wetland was filled with vegetation, according to DAR staff.

Under Blum's current proposal, he plans to clear by hand native species from sections of each stream before shocking it, then return them after the introduced species are removed. Blum said he is focused on taking out guppies, mollies, swordtail, and armored catfish. He said he expects to begin work in December and continue over the next three years.

"When you give the fish the shock, it reminds me of when I was young. One of my relatives got a shock to the head. How do the fish enjoy that?" asked Land Board member Stanley Roehrig.

Blum said the shock momentarily stuns the fish, adding that the extent of the effect depends on the fish's size and physiology and the conductivity of the water.

"There is a possible collateral mortality," he said. (All of the removed introduced fish will eventually be ground up and examined for nutrient composition, etc.)

Blum said similar work has been done in the Caribbean and Puerto Rico, with a high success rate post-removal.

DAR biologist Glenn Higashi explained that electroshocking native fish can kill them, which is why it's not used here to assess fish populations.

"We know some o'opu (native stream goby), it does hurt them until they actually break their back," he said.

"One of the reasons why we want to do a permit is to show the limits of electroshocking," he continued. "We do not use electric shocking for assessment. We do snorkeling in the streams. When you electroshock, sometimes [the fish] sticks under the rock. They don't have swim bladders."

However, Higashi suggested there may be instances where electroshocking is more desirable than snorkeling.

"There are some places on O'ahu you don't particularly want to stick your faces in," he said, naming the Ala Wai canal in Waikiki as one.

"Because they're willing to document what kind of currents, what kind of water chemistry and what kind of species it's going to affect and how, we think it's a very valuable thing for us to have done. We're not really trained to use the equipment," Higashi said of Blum's research.

"For us, our use would only be for eradication purposes, not for assessment," he said.

A couple of Land Board members expressed their reluctance to issue the permit, but voted in the end to approve it.

"I have strong reservations about this, but if it's going to provide an opportunity to have our native species flourish more than they are, that would be a great thing," Roehrig said.

Blum assured the board that he would work closely with DAR on the project.

"Our aim is to improve the populations of native fauna in the streams," he said.



Scientists Study Effects Of Climate Changes on Corals

It's common for tempers to flare at Land Board meetings, given the controversial nature of some items that come before it, such as the development of telescopes on Mauna Kea. But it's rare for Land Board members to tell testifiers to "tone it down" when discussing requests for research permits.

But that's what happened at the board's June 26 meeting. To assess historic effects of climate changes, Hawai'i Pacific University researcher Samuel Kahng had proposed collecting up to 15 large cores — up to four meters long — from coral colonies on O'ahu, Kaua'i, and Maui. The DLNR's Division of Aquatic Resources had recommended approving a permit for the work, but wanted to include several conditions aimed at mitigating potentially adverse impacts of the coring.

Kahng argued that a number of those conditions were unnecessary, baseless, and showed an ignorance of coral biology.

DAR had added a condition requiring Kahng to photograph all cored areas for one year afterward to provide the agency with hard evidence of impacts. It also suggested that the photo documentation continue for three years. DAR staff

explained that it only has anecdotal testimony from researchers on the impacts of coral coring. Generally, they say colonies have recovered, albeit slowly in some cases.

Kahng proposed to take cores 5.5 centimeters in diameter and one to four meters long. He planned to take five cores from each island, but DAR recommended he be allowed to take only two from Olowalu, Maui, because cores had already been taken from the area by researchers from the U.S. Geological Survey. Furthermore, the corals at Olowalu had suffered heavy impact from a bleaching event last year and the area is also affected by sediments, DAR staff stated.

In addition, DAR asked that Kahng not take cores between August and November, when sea surface temperatures are high and corals are more vulnerable.

Maui DAR biologist Russell Sparks crafted many of the recommendations and the agency's report to the Land Board detailed his concerns about Kahng's research, including the fact that the work would be done on colonies that are hundreds of years old.

Because he was on a research cruise, Sparks was unable to attend the June meeting. Even so, DAR acting administrator Alton Miyasaka said the division felt it necessary to bring the permit request to the Land Board because Kahng's application had been under review for "a very long time."

"We felt it was important to bring the permit to the board at this time so there would be some clarity for funding [and to decide] whether or not this project was even going to go forward," Miyasaka said.

"What's the value to the state for this project?" asked Land Board member Keoni Downing.

Miyasaka replied that the board's previous chair, William Aila, "felt it was important for the state to get as much information on potential climate change impacts as soon as possible."

In written responses to DAR's concerns, Kahng stated that the cores will provide a historical log of temperature, salinity, nutrient input, and other environmental variables.

"Analysis of these historical trends would provide the Department with more information to better plan for climate change. Additionally, analysis of coral cores will lend information to determine the novelty or regularity of recent temperature events and the compounding

impacts of anthropogenic activities,” he wrote.

Land Board chair Suzanne Case, formerly the head of The Nature Conservancy of Hawai'i, seemed more comfortable than DAR staff with the work Kahng proposed. Coring is not an unusual research method and has been done at Palmyra atoll (where TNC has a preserve), she said.

“Coral is a rock with living tissue. ... The only living part of it is at the surface,” she said.

Kahng's frustration with the whole review process showed immediately when it came time for him to testify.

“This has been reviewed for eight months. I have been responding to an unending litany of accusations and concerns. These concerns are not based on peer-reviewed science,” he said.

The risk that his coring would somehow seriously injure or kill a 400-year-old colony is minuscule, given that the area of live tissue harmed would represent only .01 percent of the colony's tissue, he argued.

“After one year of growth, that tissue will be replaced many times over. In 2.5 days, it will be replaced,” he said. He likened the coring's effects on live coral tissue to taking a teaspoon of blood from a human or taking a branch from a tree.

“This sampling is done all over the world,” he said. “Climate change is one of the biggest issues facing our society. ... We have no clue on what's going to happen on a statewide scale. To say that this data is essentially worthless is bunk!”

At that point, Land Board member Roehrig said, “I've had a short fuse. I've been asked to tone it down. I ask you to tone it down a little bit.”

Kahng replied that the review process has been unprecedentedly long and he's sent about 30 emails to DAR biologists trying to get his permit.

“I've provided responses any time there was a concern. Any time I asked for justification, no response. It's been a one way flow,” he complained.

When asked how he felt about DAR's proposed permit conditions, Kahng said that, at this point, he could live with them.

“I don't think they're based on the best available science, but I want to move on,” he said.

He did not, however, immediately agree to DAR's suggestion that he photograph all of the cored corals for three years. He said he's not funded for any follow up, so O'ahu is the only feasible area he could do it.

Board member Ulalia Woodside told



PHOTO: OFFICE OF MAUNA KEA MANAGEMENT

Two weeks after the emergency rules for Mauna Kea were approved, protesters continue to camp near the visitors center.

Kahng that he'll be working with his samples for a long time and advised him to have a care for the site he took them from.

“Part of that care should be to what we leave behind. I know you don't have that funding yet. I think you'll maybe be getting other funding,” she said.

“I'm fine with that. The only thing I ask is to be treated equitably and fairly,” Kahng replied.

Miyasaka said DAR could probably find some funding to hire Kahng to look at the coring impacts, but Kahng was still reluctant to commit.

Kahng noted that coral cores have been taken in the past and said that if the state wants to see the result, it can do that right now.

“Go take a picture,” he said.

The Land Board eventually voted to make the three-year follow-up a condition of the permit, but not before Roehrig urged DAR to get Sparks and Kahng to collaborate on a solution.

“When you get all stallions in the corral, they like to kick rather than to nuzzle. You gotta get them to work together,” he said.

Maui Land Board member Jimmy Gomes opposed the permit, in part, because Sparks had been unable to present his case to the board.



Land Board Approves Emergency Rules for Mauna Kea

It was really all about controlling crowds while the \$1.4 billion Thirty Meter Telescope (TMT) is being built. And in

the eyes of Ulalia Woodside, a member of the state Board of Land and Natural Resources, adopting emergency rules banning the possession of camping gear and barring public access to Mauna Kea at night wasn't the best way to achieve that.

But she and Maui Land Board member Jimmy Gomes were alone in that belief.

On July 10, the board's five other members voted to approve the rules proposed by the Department of Land and Natural Resources' (DLNR) Division of Forestry and Wildlife (DOFAW) and drafted in conjunction with the state Department of the Attorney General.

Specifically, the rules prohibit the possession of a sleeping bag, tent, camping stove or propane burner within the state public hunting area on Mauna Kea that encompasses lands surrounding the road to the summit. Also, no one will be allowed in the area between 10 p.m. and 4 a.m., unless they are transiting or lawfully inside one of the observatories operated by the University of Hawai'i.

As reported widely by the local and national press, recent efforts to start construction of the TMT on the slopes of Mauna Kea have drawn hundreds of protesters seeking to protect what they consider to be sacred land. Some have blocked the road with boulders or their bodies. Dozens have been arrested. Even so, a small contingent of protesters, calling themselves protectors, maintain a vigil on the mountain, day and night.

Attorney General Douglas Chin explained to the Land Board that the emergency rules, good for 120 days, were

necessary because the DLNR's existing rules prohibiting camping were too vague for prosecutors to enforce.

Before the final vote, which took place near 11 p.m., after several hours of public testimony followed by an hour-long executive session, Woodside said she was disappointed in the words of violence that had been used by both supporters and opponents of the TMT, and that she felt for the DOCARE officers tasked with controlling the volatile situation on Mauna Kea. However, she lamented that the emergency rules might not be the right tool to address the problems surrounding the protests against the TMT's construction.

She suggested that the state had not taken full advantage of the groups and organizations that have been established specifically to address native Hawaiian issues: the Office of Hawaiian Affairs, Kahu Ku Mauna (tasked with advising the University of Hawai'i-Hilo Office of Mauna Kea Management on cultural matters regarding Mauna Kea), and the Aha Moku Advisory Committee, created by the state Legislature to advise the DLNR.

"We didn't use them beforehand," she said. She went on to express her dismay that she had not heard from any state representatives who supported the rules "a genuine understanding of what it means to have cultural practice on Mauna Kea."

Indeed, she suggested that the rules DOFAW proposed to prevent camping (which would presumably help avert potential violence) might also impede people legally exercising their First Amendment rights and/or their rights to engage in traditional and customary Native Hawaiian practices.

Although many testifiers that day stressed that their protests were peaceful and bristled at any suggestion they would become violent, the Land Board's large stack of reports and written testimony included screen shots of several facebook posts by some apparent TMT opponents threatening sniper attacks, suicide bombing, and more blockages of the road.

As dangerous as some of the posts seemed, Woodside expressed her concern that all of the TMT opponents were being lumped together. Although she shared her fellow board members' fear of violence, violence "is very different from perseverance," she said.

Woodside's comments in some ways echoed testimony given by Native Hawaiian Legal Corporation attorney Da-

vid Kopper, who opposed the rules. (The NHLC represents Kalani Flores, one of the original parties in the appeal of the TMT's Conservation District Use Permit.)

Kopper argued that the DLNR had failed to comply with the Hawai'i Supreme Court's ruling in *Ka Pa'akai*, which requires the agency to identify and mitigate adverse impacts the rules may have on native Hawaiian practices.

What's more, he argued, the DLNR's current rules already prohibit things such as putting rocks in the road.

"Just enforce the rules you already have," he said.

However, when Land Board member Chris Yuen and chair Suzanne Case asked whether the protesters' encampment on Mauna Kea was illegal camping under the current rules, Kopper couldn't say.

"You tell me. . . . I've not been up there," he told Case.

To Case, Kopper's inability to answer seemed to prove Chin's point that her department's rules against camping are so ambiguous they warrant the adopting of the emergency rules.

Rather than adopting new rules, Marti Townsend, head of the Hawai'i Chapter of the Sierra Club and former head of KAHEA: the Hawaiian-Environmental Alliance (also a party to the TMT contested case hearing), suggested that the Land Board simply stay any construction under the TMT's 2011 Conservation District Use Permit until the Hawai'i Supreme Court rules on an appeal of that permit. Oral arguments have been scheduled for August 27.

When it came time for the Land Board to discuss how to proceed, however, the CDUP never came up, at least not during the public hearing. In the end, after hearing hours of passionate testimony from more than 100 testifiers, most of whom opposed the rules, the Land Board seemed most swayed by DLNR enforcement chief Jason Redulla's assessment of the situation.

In trying to convey the imminent threat to public health and safety the protests posed, Redulla recalled when people blocked the summit access road in April and June and placed rocks and built a shrine, or ahu, on the road on June 24.

"Obstruction of the roadway hinders emergency vehicles," he said, adding that vehicles that had tried to pass the obstructions came very close to the edge of the road, which has steep drop-offs.

Given the road's steepness, the lack of space puts DOCARE officers in a dangerous situation, he said.

Woodside asked how prohibiting

access to Mauna Kea between 10 p.m. and 4 a.m. helps prevent anyone from blocking the road. She had noted earlier in the meeting that there are some Native Hawaiian cultural practices that take place at night on the mountain.

Redulla responded that it would minimize the presence of people in the area, which would, in turn, make it safer for vehicles to use the road.

The Land Board ultimately went along with the rules largely to support the DLNR's Division of Conservation and Resources Enforcement and out of concern over future road blockages.

"Our people need the tools to keep order on the mountain," said board member and Hawai'i island resident Yuen, who made the motion to approve the rules. He said that based on the information presented to him, he was convinced there was an imminent safety threat on Mauna Kea. Earlier in the meeting, Yuen stressed that there are legal ways to protest the TMT and "it's not standing in the road, rocks in the road. I don't know what they expect the government to do when the government has to follow the rule of law."

Perhaps addressing cultural uses or concerns expressed by hunters who may have to unexpectedly stay on the mountain past dark, Yuen added that the DLNR can and may grant special use permits to allow overnight stays.

Board member Stanley Roehrig, also from Hawai'i island, seconded Yuen's motion. Roehrig said it was a painful decision for him to make and laid out several things he thought should be done to address the various issues that had been raised. For one, he said the university's Mauna Kea advisory group, Kahu Ku Mauna, needed to have more of a say in what happens on the mountain than it has had in the past. And to encourage more peaceful protests that do not include blocking the road, he suggested that a permanent protest site be designated.

"The chair is open to considering that and so are we," he said.

When it became clear that the emergency rules would pass, one TMT opponent exclaimed, "Ku Kia'i Mauna," a phrase calling for protectors of the mountain to stand strong.

"I'll see you on the mountain," he said as he left of the room.

Gov. David Ige signed the rules on July 14 and DOCARE officers have reportedly been handing out fliers to protesters about the rules. Even so, some of them continue to occupy their encampment.

NextEra Utility in Florida Opposes Rooftop Solar Initiative

Recent news coverage of the proposed NextEra-Hawaiian Electric merger has revealed a fact that is disturbing to many Hawai'i residents concerned about NextEra's commitment to distributed generation, which is manifested most frequently in the form of rooftop solar panels.

As noted by reporter Kathryn Mykleseth in the *Honolulu Star-Advertiser*, for example, "There are approximately 3,000 [Florida Power & Light] customers with rooftop solar among the utility's 4.8 million customers. Hawaiian Electric — which includes Hawaiian Electric Co. on O'ahu, Hawai'i Electric Light Co. on Hawai'i island, and Maui Electric Light — has approved almost 70,000 rooftop solar systems with a total of only 450,000 customers." Florida Power & Light, or FPL, is a subsidiary of NextEra.

One reason for the low solar penetration is the fact that Florida is one of just four states in the nation where net metering is still not allowed and citizens are required to purchase electricity from a utility.

To remedy this, a grassroots group called Floridians for Solar Choice launched a petition drive in support of a state constitutional amendment that would reduce "barriers to supplying local solar electricity."

Last spring, the Florida attorney general, Pam Bondi, asked the Florida Supreme Court to advise on the validity of the initiative petition before placing it on the ballot in 2016. At that time, more than 88,000 signatures had been collected; should the Supreme Court approve the petition, the group would need to get more than 683,000 signatures.

On June 10, a coalition of the state's largest utilities, led by FPL, filed a brief with the court opposing the petition.

"The initiative ... is contrary to Florida's comprehensively regulated system for the provision of safe, efficient electric power and provides constitutionally mandated economic protection for one component of the solar industry at the expense of the state's electric power providers and their non-solar customers," the brief states. Also, it goes on to say, the initiative "interferes with state and local protections and functions and disrupts funding of state and local activities. Finally, it forces voters to accept consequences they might not otherwise wish to accept in order to obtain the promised benefits of local solar providers."

"Ironically," the brief continues, "it will obstruct development of the state's energy policy, including the promotion of solar power. Comprehensive

growth and emergency energy policies will have to be developed around what could be a significant number of new, free-lance providers."

Bondi, the attorney general, has also briefed the court in opposition to the measure. The Supreme Court is expected to begin hearing arguments in early September.

Competing Petitions

Then in mid-July, a new group popped up on the Florida scene: Consumers for Smart Solar, which is proposing what it says is a more "consumer-friendly" ballot question. Instead of requiring net metering, the CSS proposed language basically allows customers to install solar systems for their own use: "This amendment establishes a right under Florida's constitution for consumers to own or lease solar equipment installed on their property to generate electricity for their own use. State and local governments shall retain the ability to protect consumer rights and public health and safety, and to ensure that consumers who do not choose to install solar are not required to subsidize the costs of backup power and electric grid access to those who do."

William Pentland, a contributor to *Forbes* magazine, commented on the sudden rise of CSS. "Florida's investor-owned utilities are anything but keen on the [Floridians for Solar Choice's] ballot proposal. This may explain why some people suspected that Florida Power & Light, a wholly owned subsidiary of NextEra Energy and the state's largest utility, may be backing Consumers for Smart Solar, a political action committee that appeared out of the blue." Pentland notes that the organization was registered with the Florida Department of State on July 8, and "In less than a week, CSS launched a snazzy new website loaded with professionally produced multimedia content, recruited a slate of high-profile supporters and staged a major news conference kicking off its statewide ballot initiative."

Pentland went on to note that his suspicions about links between CSS and FPL "deepened when I discovered that CSS is located at the same address as another elusive PAC called 'Take Back Our Power,' which was funded almost exclusively by FPL as part of a bitter political battle between the utility and the city of South Daytona." In 2011, he writes, the city had proposed setting up a municipal utility instead of renewing its franchise agreement with FPL.

"FPL contributed almost \$400,000 to Take Back Our Power, including a signifi-

cant amount of so-called 'in-kind contributions,'" Pentland writes. Both TBOP and CSS shared the address in Tallahassee that is the headquarters of Carroll & Company, an accounting firm providing campaign finance compliance services. "Carroll & Company served as the campaign treasurer for Take Back Our Power. It is playing the same role for CSS," Pentland noted.

Blogger John Howell of *The Daily Fray* asked FPL about its contributions to the new group. FPL spokeswoman Alys Daly responded, Howell reported, in an email. "We have appreciated the opportunity to offer technical and policy assistance to Consumers for Smart Solar in the development of their amendment," Howell quoted her as stating. "We have not yet made a donation, but we certainly intend to join others in supporting the effort."

Floridians for Solar Choice, which has been in existence for more than a year, has reported receiving donations of nearly \$600,000, much of which was from the Southern Alliance for Clean Energy.

As of press time, Consumers for Smart Solar had not filed any report on contributions with the state's Division of Elections.

Meanwhile, in Hawai'i

The Division of Consumer Advocacy has taken note of the involvement of FPL in the brief filed with the Florida Supreme Court on the matter of the sufficiency of the Floridians' for Solar Choice petition.

In a filing with the state Public Utilities Commission on July 17, the consumer advocate notes that Hawaiian Electric president Alan Oshima had testified that "NextEra Energy shares [Hawaiian Electric's] vision of ... integrating more rooftop solar energy."

But, the consumer advocate goes on to state, "NextEra Energy's principal utility subsidiary, Florida Power & Light Company, has joined other Florida utilities in opposition to a Florida initiative petition sponsored by Floridians for Solar Choice..."

Do the "facts and arguments presented in the referenced Brief represent the position of Florida Power & Light Company?" NextEra and Hawaiian Electric were asked. Also, the consumer advocate asked NextEra to "[e]xplain whether the facts and arguments presented in the referenced Brief represent the position of NextEra Energy, Inc., on the issues addressed therein within Florida and more broadly throughout the United States."

No response had been filed by the time *Environment Hawai'i* went to press. — P.T.

Solar Farm Proposals for O‘ahu Awaiting Final PUC Decisions

It was big news last winter when Hawaiian Electric Company — HECO, the utility that serves O‘ahu — announced that it had reached power purchase agreements (PPAs) with developers of six large-scale solar farms that would, when operational, feed more than 200 megawatts of power into the O‘ahu grid.

At the time, Shelee Kimura, a HECO vice president, described the agreements as “a significant step toward transforming the generation portfolio on O‘ahu to achieve our aggressive, low-cost clean energy goals.”

Those agreements were in addition to two earlier PPAs with a capacity of around 34 megawatts. All totaled, HECO was seeking approval from the Public Utilities Commission of eight PPAs having a combined capacity of 243 megawatts.

Over the next few months, the agreements were reviewed by staff at the Public Utilities Commission and the state Division of Consumer Advocacy.

Then, on June 2, in a move that surprised many — not least HECO — the PUC deferred acting on six of the proposed agreements. In the case of a seventh, given delays in completing an interconnection requirements study, the commission amended the procedural schedule. In each case, the PUC raked the utility over the coals for the scarcity of information and the unsubstantiated arguments it had made in support of the proposals. And the commission did so even as it acknowledged the tight time constraints imposed by the December 31, 2016, deadline for such projects to be operational if the developers are to qualify for a federal investment tax credit of 30 percent.

In addition, the PUC rejected outright an eighth proposal: HECO’s request for approval of a power purchase agreement with a 20 MW solar farm near Mililani.

To push the other dockets further down the road to a final decision, the commission ordered HECO to address the deficiencies in its earlier filings by June 12. After that, HECO, the consumer advocate, and commission staff would participate in a “technical conference” to give HECO the opportunity to “quickly clarify any remaining questions.”

‘Time Is of the Essence’

In the meantime, under the agreements that

HECO has with the developers, a critical milestone has passed. All of them contain what the PUC has termed “drop-dead dates” — clauses that give the developers the option to pull out within certain time frames if PUC approval is not obtained by certain dates.

In the case of Waianae Solar, for example, the agreement with HECO states that it is of critical importance that the PUC make a decision on the agreement “as expeditiously as possible, but no later than June 15, 2015.”

Similar provisions, with varying deadlines, are in all of the other PPAs as well.

Waiver Projects

All of the proposals for the utility-scale solar plants are so-called waiver projects. Nine years ago, the PUC set forth a framework for utilities to add capacity to their grids from independent power producers through a competitive bidding process. At the urging of Hawaiian Electric, certain exemptions — or waivers — from the competitive bidding framework were granted, including an exemption for developments with a capacity of 5 MW or less and for “power from a non-fossil fuel facility ... that is being installed to meet a governmental objective.”

In February 2013, in an effort to push toward

the sustainable-energy goals in the state’s Renewable Energy Portfolio, HECO invited proposals from developers that could bring their projects online before the end of 2015 and do so within terms of a model power purchase agreement “without substantial modification.” Also, the projects had to be greater than 5 MW capacity, with electricity priced at

Power Purchase Agreements Proposed by HECO

Docket	Name	Location	Capacity (MW)	Owner	Acres
2014-0077	Lanikuhana	Mililani	20	SunEdison	143
2014-0308	Ka La Nui	Waianae	15	NextEra	70-90
2014-0354	Waianae Solar	Waianae	28	Toyota/Tokyo Electric Power	200
2014-0355	Ho‘ohana Solar Park	Kunia	19	Hanwa USA/ Forest City	124
2014-0356*	Kawailoa	Kawailoa	49	SunEdison	305
2014-0357*	Lanikuhana	Mililani	15	SunEdison	211
2014-0358*	SunE Waiawa Solar	Waiawa	50	SunEdison	250
2014-0359*	Waiawa PV	Waiawa	47	SunEdison	313

*An asterisk denotes a recommendation for approval from the state Division of Consumer Advocacy.



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less than 17 cents per kilowatt hour (kWh). Proposals that met these terms would be submitted by HECO to the PUC for approval as so-called waiver projects.

Twenty-six companies responded to the proposal by the deadline of March 22, 2013. One application was rejected because it was submitted late. Thirteen were above the target price. One was eliminated because HECO determined the developer did not have control of the project site. One was rejected because it was proposed on an island other than O'ahu.

The 10 remaining proposals were winnowed down further to six after four refused to revise their pricing when the Legislature did not pass an anticipated state tax credit. Then the utility kicked off the highest-priced offer, leaving five on the table, all of which had kWh costs hovering in the range of 16 cents. Four were for solar farms, one was for a wind farm. By November, however, two of the projects, including the wind farm, had dropped out.

In September and October 2014, two of the last three dropped out as well, leaving just one: NextEra's proposed 15 MW Waianae plant, which was the subject of HECO's application for approval of a power purchase agreement submitted on October 10, 2014.

In the meantime, HECO had issued a "refresh opportunity" to 20 developers that did not make the cut in the first round, inviting them to submit proposals with a target price of 16.25 cents per kWh or less. Six survived the winnowing process this time and were the subject of the applications submitted to the PUC on December 4, 2014.



The Corporate Sponsors

Of the two dozen or so projects that were proposed in response to Hawaiian Electric's first invitation to renewable energy developers, just one, for Ka La Nui

Solar, made it through to the point where a completed power purchase agreement was submitted to the Public Utilities Commission.

And that one is with a subsidiary of NextEra, the corporation that is poised to take over all three Hawaiian Electric utilities should the takeover be approved by the PUC.

Five of the eight power purchase agreements are with SunEdison. The 167 MW of power that SunEdison facilities would provide—were all to win PUC approval—account for nearly three quarters of the total solar capacity HECO is proposing in these applications. If the Lanikuhana facility for 20 MW is excluded (as the PUC has already done), SunEdison facilities will still be generating more than 72 percent of the power put out by the solar farms.

To be sure, SunEdison did not start out owning all these projects. The two Mililani

projects were owned originally by Lanikuhana Solar, LLC, a subsidiary of Castle & Cooke Homes Hawai'i. In 2013, Castle & Cooke sold the company to First Wind of Boston, which operates two wind farms on Maui as well as two on O'ahu's North Shore. Last January, First Wind was acquired by SunEdison.

First Wind also was the developer of Kawailoa Solar, to be built adjacent to its wind farm there and designed to share its transmission facilities, and of the 47 MW facility proposed for Waiawa.

The only project that SunEdison was developing from the start is the other project at Waiawa, for 50 MW.

HECO itself had proposed a 15 MW project to be developed alongside the utility's 650 MW Kahe power plant. Last November, the PUC rejected the proposal, finding that HECO had not shown that this would reduce energy costs to customers. — *Patricia Tummons*

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Dr. Chip Fletcher

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In 2011, Fletcher was awarded the University of Hawai'i Chancellor's Citation for Meritorious Teaching (his second), and he was recognized in 2011 by the U.S. Environmental Protection Agency with an Environmental Achievement Award in Climate Change Science.

He literally wrote the book on the effects of climate change in Hawai'i: *Living on the Shores of Hawai'i: Natural Hazards, the Environment, and Our Communities* (2011, University of Hawai'i Press). In 2013, J. Wiley & Sons published his book *Climate Change: What the Science Tells Us*.