

State's green-energy industry gets its own Top 40 project list

Premium content from Pacific Business News by Duane Shimogawa, Reporter

Date: Friday, November 25, 2011, 1:00am HST



Duane Shimogawa

Reporter- *Pacific Business News*

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One of Hawaii's fastest-growing industries now has its own Top 40 list.

The State Energy Office has identified 40 projects that in its estimation can make the biggest impact on Hawaii's renewable-energy future. The list is an attempt to provide transparency and consistency to the energy scene, according to Administrator Mark Glick.

"Clearly our focus as facilitators should be on projects that have the ability to make a meaningful impact on the state's energy goals," Glick said. "Our team of project specialists really need the direction or should have some sort of guideline on which they spend their time on."

The list includes 16 projects on Oahu, 10 on Kauai, eight on the Big Island, four on Maui and one each on Molokai and Lanai.

In terms of types of projects, wind and biofuel lead the way with eight apiece, followed by photovoltaic (7) and hydroelectric (6).

The state based the list on criteria such as projected size, status of permitting, power purchase agreements and site control.

"We're not necessarily rating them," Glick said. "But there's a list of necessary things that should happen for projects to be deployed and we're simply saying here's where these various projects are relative for these things to be in place."

Topping the list is First Wind's plans to build its fourth Hawaii wind farm, this one on former sugar cane land owned by **Kamehameha Schools** northeast of Haleiwa on Oahu's North Shore.

The 70-megawatt Kawailoa wind project, which still needs state regulatory approval, would produce enough energy to supply 14,500 homes, based on estimated wind-output figures. Construction is slated to start next month and it should be operational by the end of 2012, according to Kekoa Kaluhiwa, First Wind Hawaii's director of external affairs.

First Wind, which currently has 11 projects throughout the U.S., has wind farms in Kahuku on Oahu and Kaheawa on Maui and is planning phase two of that project.

Kaheawa's phase two is No. 4 on the list. The 21-megawatt project will add to the existing 30-megawatt wind facility, which has been operating above Maalaea since 2006 and is the largest commercial wind project in Hawaii.

"I think it's great first of all to be on this list," Kaluhiwa said. "It's a credit to the wind industry as we try to find clean-energy sources across the state."

Perhaps the most surprising project on the list is the second-ranked H-Power expansion on Oahu, which will add a third boiler to increase its capacity to burn garbage from 600,000 to 900,000 tons per year.

H-Power's 46-megawatt facility at Campbell Industrial Park can increase production from 4.5 percent to 6 percent of Oahu's electricity. By the summer of 2012, the plant will have an 82-megawatt capacity with a net of 75 megawatts of firm capacity, according to Tim Steinberger, director of the Honolulu Environmental Services Department.

"People don't think of trash as being a renewable-energy source," Steinberger said. "It's recognized in the state's renewable-energy portfolio and lots of people have heard of H-Power but don't have a full appreciation for it."

Although it doesn't get the attention in the renewable-energy world as much as other sources, Steinberger said the waste-to-energy plant generated \$40 million in revenue last year.

Big Island Carbon also plans to generate heavy amounts of revenue. The 35th-ranked renewable-energy project is still in its testing phase, sending out samples of its purification/biomass product to Southwest Asia, the U.S. Mainland and Europe.

Big Island Carbon CEO Rick Vidgen said it will start to commercialize its operations by the end of the first quarter of next year. It transforms macadamia nut shells discarded by Big Island growers into granulated activated carbon used for air, water and chemical purification. The shells also can be converted into biofuels that can be mixed with diesel to power the company's facility, located on four acres of Hawaiian Home Lands in Kawaihae.

"We didn't start out to be green," Vidgen said. "We started out to be a profitable company and just so happened we ended up this way, so at the end of the day we have to make money — it's not magic."

Pacific West Energy sits just a couple of spots below Big Island Carbon at No. 37 on the renewable-energy project list. It hopes to convert existing and former sugar cane and woody biomass lands on Kauai into an energy plantation by first building a 20-megawatt biomass power plant, which it's calling phase one.

The company intends to integrate biofuel, including ethanol production, in phase two.

"I'm pleased that they [the state] recognized us and support us as one of the viable projects in the state," Pacific West Energy President William Maloney said.

If all goes well, he said, the company plans to break ground on its project by the end of 2012 and be online by the end of 2013.

"I don't think it's necessarily a seal of approval," Maloney said referring to the state's list of renewable-energy projects. "But I see it as trying to put out projects that they [the state] think are viable without making any formal endorsement."

Glick hopes the list ultimately will draw more people to the Energy Office's website.

"We'd like it [website] to be the place that those interested in clean-energy development go to get answers on any project that they'd be interested in," he said.

Criteria for selection/rankings

- Projected size
- Status of permitting
- Status of power purchase agreement
- Site control

The Top 40: Renewable-energy projects in Hawaii — clean-energy leaders

The state Energy Office has identified the following 40 projects for their potential to contribute to the Hawaii Clean Energy Initiative.

Project Developer/Island/Resource/Proposed Capacity

- 1) First Wind, Oahu, Wind, 70 MW
- 2) HPower Expansion, Oahu, Waste-to-Energy, 30 MW
- 3) Sempra Energy (Auwahi Project), Maui, Wind, 21 MW
- 4) First Wind, Maui, Wind, 21 MW
- 5) Puna Geothermal Venture/Ormat, Hawaii, Geothermal, 8 MW
- 6) Honua Technologies, Oahu, Bioconversion, 6.6 MW
- 7) Aina Koa Pono, Hawaii, Biomass, Biofuel, 2.7 MW; 24 million gallons per year
- 8) Hu Honua Bioenergy, Hawaii, Biomass, 25 MW
- 9) Green Energy Hawaii, Kauai, Biomass, 7 MW
- 10) Castle & Cooke, Oahu, Photovoltaic, 20 MW (4 x 5 MW)
- 11) Phycal Pilot Facility, Oahu, Biofuel (algae), 150,000 gallons per year up to 3 million gallons per year
- 12) Pacific Biodiesel, Hawaii, Biofuel, 2.6 million gallons per year
- 13) Kalaeloa Solar Two, LLC (SunPower)/ Dept. of Hawaiian Homelands (DHHL), Oahu, Photovoltaic, 5 MW
- 14) Castle & Cooke, Lanai, Wind, 200 MW
- 15) Honeywell UOP, Oahu, Biofuel, 50 million gallons by 2014
- 16) Honolulu Sea Water Air Conditioning (HSWAC), Oahu, Ocean, 25,000-ton cooling load
- 17) Scatec/Hunt Development, Oahu, Photovoltaic, 5.9 MW
- 18) Forest City, Oahu, Photovoltaic, 2-3 MW
- 19) NexGen Energy, Hawaii, Wind, 100-200 KW
- 20) NexGen (Gen-X)/Northern Power Systems, Hawaii, Wind, 100-200 KW
- 21) The Gas Company, Oahu, Synthetic Natural Gas, Pilot facility up to 5 million gallons per year
- 22) West Wind Works – Na Pua Makani, Oahu, Wind, 25 MW
- 23) BioEnergy Hawaii, Hawaii, Waste-to-Energy, 11 MW
- 24) AES (Cogeneration), Oahu, Biomass-Coal Cogeneration, 5 MW
- 25) Clean River Power 16 LLC (Free Flow Power Corp.) (Kitano Water Power Project), Kauai, Hydro, 7.7 MW
- 26) Clean River Power 15 LLC (Wailua River Hydroelectric Project), Kauai, Hydro, 6.6 MW
- 27) Kahawai Power 2 LLC (Free Flow Power Corp.) (Makaweli River Water Power Project), Kauai, Hydro, 6.6 MW
- 28) Konohiki Hydro Power LLC (Pacific Light & Power) (Puu Lua Project), Kauai, Hydro, 5.3 MW
- 29) Kahawai Power 1 LLC (Hanalei River Hydroelectric Project), Kauai, Hydro, 3.5 MW
- 30) Cellana/ClearFuels/Alexander & Baldwin, Maui, Biofuel (Algae), 1.26 million gallons per year
- 31) Kalaeloa Solar One LLC (Keahole Solar Power)/Dept. of Hawaiian Home Lands, Oahu, Concentrated Solar Power (CSP), 5 MW
- 32) IC Sunshine/Sun Edison, Oahu, Photovoltaic, 5 MW
- 33) Kikialoa Solar (Pacific Energy Partners), Kauai, Photovoltaic, 3.5 MW
- 34) Kauai Island Utility Cooperative (KIUC)/Poipu Solar LLC/AES Solar Power LLC/Knudsen Trust Land, Kauai, Photovoltaic, 3 MW
- 35) Big Island Carbon, Hawaii, Biomass (Macadamia Nut Shell), 1,000 tons granular activated carbon
- 36) Molokai Renewables, Molokai, Wind, 200 MW
- 37) Pacific West Energy, Kauai, Biofuel, 20 MW
- 38) Kahawai Power 5 LLC (Wailua Reservoir), Kauai, Hydro, 2 MW
- 39) Ocean Thermal Energy Conversion, Oahu, Ocean, 10 MW pilot
- 40) Oceanlinx, Maui, Wave, 500 KW

SOURCE: Hawaii State Energy Office

Duane Shimogawa covers energy, real estate and economic development for Pacific Business News.