Natural Energy Laboratory of Hawaii Authority
Fiscal 2007 – 2008
Annual Report

Economic Impact:

- 8 administrative and 11 operational personnel employed by NELHA paid from internally-generated revenues, not state general funds.
- 43 tenant companies, commercial as well as research and development, served by NELHA.
- 310 private sector jobs at 43 companies.
- $54,000,000 -- the value of the 43 tenant companies' products produced in 2008.

CHAIRMAN'S AND CHIEF EXECUTIVE OFFICER'S WELCOME LETTER

"The significant problems we face cannot be solved at the same level of thinking that created them"
Albert Einstein

To the People of Hawai'i:

Fiscal 2007 – 2008 was one filled that aptly reflected Einstein's comment of long ago. This was true for both the State of Hawai'i and the Natural Energy Laboratory of Hawai'i Authority.

What all of us in Hawai'i must realize is that we are the most, if not one of the most, carbon-intensive societies on Earth. We consume vast amounts of energy in our everyday living here in the Pacific, not just in electricity, but motor fuels, importation of food, medicines, and virtually everything we consume. The dramatic and totally unpredicted rise in oil prices demonstrated our state's vulnerability to fossil fuel prices and the resultant havoc they can cause throughout the economy.

We must solve our energy problem while at the same time providing growth and employment opportunities for current residents and our children.

NELHA already was moving forward, through public/private partnership arrangements, with a good number of alternative energy research projects when the rise in oil prices occurred. These range from solar concentration, wind energy and solar thermal electricity production to biofuels such as jet and diesel, from algae and renewable waste-to-energy production. Even though what may appear to be a precipitous decline has since occurred in fossil fuel prices, NELHA believes we must continue development of the alternatives to fossil fuels in order to be better prepared during the next inexorable rise in oil prices.

During the year, NELHA welcomed commencement of a number of innovative and creative alternative energy projects, both designed to test new alternative energy devices and produce electricity on a commercial basis.

- Keahole Solar Power LLC, after several years of effort, cleared the hurdles to building its 500 Kw solar thermal demonstration project near the Gateway Center.
- SolFocus Inc. applied for and was granted a lease to conduct research and development on its larger scale future generation solar concentrating devices with improved sophisticated tracking mechanisms.
- Cellana LLC undertook a major construction effort at its algae to liquid fuels research and development site.

- W2 Energy Development Corporation applied for and was granted a lease to experiment with its new wind generating device, which could be 8 to 10 times more effective than the traditional propeller-driven windmill as well as function efficiently in a low wind environment.
- Finally, Bioenergy Hawaii LLC was granted approval in concept for a waste-to-energy and biofuels from algae project. This project would generate electricity as well as produce liquid motor fuels (such as jet fuel or diesel) using a number of innovative techniques in combinations heretofore unevaluated.

Several other organizations contacted NELHA during the year to ascertain whether they, too, could commence biofuels projects based on algae feedstock at NELHA.

NELHA's plan, the Green Energy Zone, won much recognition in both the legislature and among the public during the year. This is NELHA's effort to become, by 2012, a totally green energy area --- both in its production and consumption of power within the NELHA property. PacificBasin Communications and its partners honored NELHA as the government body doing the most in Hawaii to raise awareness on sustainability issues, inspiring our community to take part in preserving our environment by fostering sustainable behavior in how we live, work and play. The award for "Who's Keeping Hawai'i Green" was made as a Moanalua Gardens celebration in September.

It is NELHA's intention to continue pursuing its Green Energy Zone plan, leading by example the way for Hawai'i to free itself from the chains of fossil fuels. NELHA has submitted a Request for Proposal (RFP) for issuance through DBEDT for a 1 to 3 Mwe photovoltaic solar array project. Work on this project originally began in 2006, when it was intended to generate power for the benefit of both NELHA and the Kona International Airport. DoT subsequently decided to pursue solar array development at its airports on an independent basis. The planned use of the electrical power from this array would be for powering one or two of the NELHA seawater pumping stations, thus reducing electrical costs and benefiting NELHA tenants, especially those engaged in aquaculture. With the extension of certain tax benefits by the federal government and the incoming federal administration's expressed goal of increasing the use of renewable energy, it is hoped that this project will proceed at a rapid pace once the RFP is issued.

NELHA has finished work on a RFP for an Ocean Thermal Energy Conversion plant. The submission of this will take place late 2008. One of the important aspects of this RFP is that it calls for the successful bidder to convey a portion of its intellectual property and development rights going forward to the people of Hawai'i through NELHA. In this way, the state earns a financial return on its investment of more than $70 million in ocean energy research facilities at NELHA.

The Hawai'ian legislature initiated, and both chambers passed, a bill during the most recent session to exempt NELHA from the DBEDT procurement process; which would have meant NELHA was still subject to the state procurement process. The bill was vetoed.

The legislature also passed a resolution calling for an audit of NELHA. NELHA staff has worked closely with the State Auditor's Office, providing thousands of pages of written information and hours of interviews in fulfillment of this resolution. Results of the audit are due to the legislature early in 2009.

Twenty percent of NELHA's earned revenues are paid to the Office of Hawaiian Affairs. Another 5.0211% are paid to DBEDT and DAGS for administrative purposes. NELHA receives no general funds to support its operations and must operate as if it is a profit-making private company covering its own expenses. Our diligent implementation of strict cost containment measures and justified increases in our prices for services rendered to tenants has enabled NELHA this year to reach a point of self-sustainability.

Our Master Plan, being formulated by Group 70, is well-underway. It is anticipated being completed next April by Group 70. It is designed to help guide NELHA for the next decade or so in terms of what types of tenants should be located at NELHA, what type of products they might produce or manufacture, and the highest and best uses of the remaining undeveloped land.

We end this welcoming letter with an extremely positive statement: NELHA's 19 employees are the best in the state.

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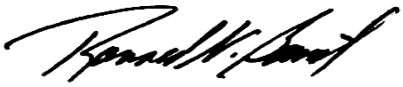
Best regards,

John DeLong
Chairman



Ron Baird
Chief Executive Officer

2008 NELHA Green Energy Zone Annual Report

Lately, renewable energy is discussed everywhere: in government halls, research institutions, among venture capitalists, investment conferences and daily, among citizens. When the successful OTEC plant was built at NELHA and then stopped, this park was looked at as "the solution that should have been." However, NELHA is now squarely back on the map; fulfilling its original mission: creating energy security for Hawaii from our abundant natural resources.

In August 2007, NELHA developed the ideas for creating a Green Energy Zone. Two months later, the first presentation was made to Lt. Governor Duke Aiona. The goal of the Green Energy Zone is to develop a diversified portfolio of renewable energy projects to produce enough clean energy to power NELHA by 2012. The idea was met with great enthusiasm and support. Since then, this concept has been communicated to a broad range of audiences and lead to the creation of a legislative initiative (HCR-76) mandating this path.

Hawaii is the clear leader in setting the bar for renewable energy production with Governor Lingle and the Dept. of Energy signing of the Hawaii Clean Energy Initiative. This initiative aims at increasing Hawaii's clean indigenous energy source at 70% and NELHA's Green Energy Zone will lead the way in helping to achieve this aggressive goal. Since the seeds of the Green Energy Zone were planted, NELHA is enjoying the fruits of its labor with exciting new clean energy projects launching. From Sopogy's solar thermal energy farm to SolFocus concentrated Photovoltaic system to Wind Wings and more, NELHA is leading the way to 'greening' Hawaii's energy source. With the continued support of our local governments, businesses and the people, NELHA is confident that this success will continue and Hawaii will grow into the leading State in energy technologies.

Today, we have implemented the initial stages of the Green Energy Zone with much success. There has never been a better time to be at the forefront of Renewable Energy and it is important that the State understands NELHA's potential role in leading the State and the Island Nations. A summary of where we stand today with our 5 year project vision follows next.

NELHA Future of Green Energy Projects

1. **Cellana – Shell Oil/HRBP Biodiesel (February 2009 construction completed and in production)**
   - Passed first phase of experimentation
   - Now building a 6 acre Farm
   - Biodiesel production for power plants
   - Biodiesel can be processed for Jet Fuel
   - R&D project to create the technology that could exported
   - Biodiesel vehicles to be introduced at NELHA

2. **SOPOGY (online February 2009)**
   - Solar-Thermal Technology (500 kW to 1 MW)
   - 4 acre farm across from Gateway now in construction phase
   - $10 million Special Revenue Bond passed by Governor
   - Solar Energy to Sterling Engine– Generator system compatible with Utility
   - IPO will allow plant to be owned and operated by others
   - Highway location becomes source of pride and interest

3. **RENEWABLE ENERGY RFP (issued January 2009)**
   - Northwest Coast of NELHA up to 3 MW
   - Powers NELHA, then Tenants, and then Airport
   - Potential for an Array of Solar and other Renewable Technologies
   - Phase-in project allows it to right size as NELHA park and Airport grow
   - Energy Storage component sought: Hydrogen, Battery, Molten Salt, etc.
   - Electric Vehicle plug-ins for Transportation
   - EV Battery Trucks allow battery movement all over NELHA park
   - Property is located by Manta Ray Park = good public exposure

4. **OTEC SCALE UP (submitted to DBEDT December 2008)**
   - A 1 MW project that would produce net 640 KW of net base load energy that can be readily used for NELHA's 55" Pumping Station
   - This project is critical step to scale up to the next size plant.
   - 500,000 gallons a day of fresh water to be used in a variety of ways – Irrigation, Drinking water, Bottled OTEC water – support Renewable Energy water. Possible pumped storage.
   - "People keep asking us why Hawaii doesn't have one. It will also elevate Hawaii to its rightful place as the showcase for OTEC; it will be the plant we bring the world to see. The vision is widespread use of this technology within the next 30 to 50 years. OTEC could replace fossil fuels during this time."

5. GATEWAY DISTRIBUTED ENERGY CENTER – Micro grid (July 2009)

- Build Micro grid around Gateway Building
- Install Photovoltaic systems that provide supplementary energy
- Build 2 more Renewable Energy Laboratory Buildings
- Lengthen Gateway Chimneys so building functions as designed ($100K)
- Implement Gateway Energy Conservation Program to save 33% Energy
- More Experimental technologies will be encouraged to test at the Gateway Demonstration Grounds

6. **W2 ENERGY WIND WINGS (coming January 2009)**

- A new designed wind harvesting design
- Increases efficiency over 60% of wind turbine design
- 2 experimental Wind Wings to be placed at NELHA
- Manufacturing agreement to happen at NELHA once technology is honed

7. **BioEnergy Hawaii, LLC. Waste to Energy (January 2012)**

- First Waste to Energy on Big Island
- 6 to 12 MW Waste Gasification
- Algae to Biofuel – millions of gallons
- Other Hawaii Islands and Asia potential sales
- Ash to concrete

8. **Renewable Energy Fueling Station (December 2011)**

- First Renewable Fuel Station
- Biodiesel, Electric Cars, Hydrogen
- Partnership with Auto Maker
- NELHA Partnership with Hydrogen, Biodiesel, Electricity Providers

9. **Airport Partnership (in master planning phase)**

- First Seawater Air-conditioned Airport (SWAC)
- Renewable Energy Back-up power
- Homeland Secure Airport
- Renewable Energy Vehicle rental
- Renewable Energy Fueling station
- Edu-tourism destination
- NELHA product sales partnership
- Harvard Presentation (August 2008)

10. HYDROGEN HIGHWAY (January 2010)

- Hydrogen Storage at Lab
- $50 Million – Special Revenue Bond given to H2 Technologies
- H2 Tech in discussions on locating at NELHA
- Hydrogen Engine Conversion Station
- Hydrogen Vans to transport from Airport to Ocean Center
- Hydrogen Vehicles to pickup Hydrogen from excess capacity at Renewable Energy Projects

11. ELECTRIC AVENUE (Master Planning Phase)

- Electric Vehicles dominate the traffic here – all vehicles from NELHA to the Airport will be powered this way.
- Part of the Airport Access Road where Aqua Farms, Water Bottlers, etc can ship directly to Airport and avoid/prevent traffic and accidents
- Our intention is to keep a fleet of Trucks hooked to plug-ins from Renewable power to be used by Farms.
- Excess energy not used could be put back in the Micro-grid as from the battery storage – a way of having mobile batteries
- Electricity Train could be one big battery for the Airport or NELHA

12. OFFSHORE OTEC

- A 50 to 100 MW Power plant capable of relocating – an OTEC ship
- Export hydrogen to NELHA station to provide fuel for Hydrogen Highway.
- Producing 500,000 gallons of drinkable water per day to be used for drinking for irrigation for local community for Aqua farms using fresh water for Transport to Water deficient zones
- Surrounding Aqua farms around perimeter of plant - Algae Farms, Biodiesel
- Becomes World Recognized Marine Research Platform with capabilities of getting to Deep unexplored areas – quickly and safely

13. KONA INNOVATIONS CENTER/OCEAN RESEARCH CENTER (KICK)

- Important to set some of this 'marquee' 80 acre land at top of property for Visiting Researchers office space and for a cultural center for Hawaii
- First Phase: Solar-powered Whale Tail – Second Phase is Whale Tail Wind Wings - Third phase is Research/Office Center
- Deep Sea Marine Research Technology Center with
    i. Renewable Energy Research
    ii. Project based College internships
    iii. Medical Research
    iv. Remote operated vehicles to deep-sea OTEC platform
    v. Aquarium & Symphony Hall

NELHA Vision

To become a Green Energy Zone – a research and business park powered by maximum Renewable Energy

Today NELHA has:

- Longest, Deepest and Widest Ocean pipelines
- Base infrastructure for the next OTEC
- Acres of algae farms ready to convert to the next biofuel
- International airport as neighbor for partnership and export
- Fastest growing area of Hawaii Island with West Hawaii University campus planned.
- Fertile business environment which includes Foreign Trade and Enterprise Zone status

To implement the Green Energy Zone - NELHA needs:

- Fast Track Permitting –
- Fast Track Procurement -
- TMK Wheeling allowed -
- Utility Fee-Free zone = No Transmission, Wheeling and other fees
- EIS and SMA permits for Renewable Energy
- NELHA's performance sharing with projects/technologies
- NELHA must provide Better Incentives for Renewable Developers
    - Rent Free for first years
    - 2% Gross Sales percentage rent only after threshold revenue achieved
    - Clean Energy companies automatically QHTB

NELHA's Present Support and Future Legislation

August 2007 – NELHA initiates the Green Energy Zone

January 2008 – **Hawaii and DOE Sign Agreement**

The State of Hawaii and DOE formed a partnership on January 28 that will work towards dramatically shifting Hawaii's energy system from one that is fueled primarily by oil to one that is powered primarily by renewable energy.

July 2008 - U.S. and New Zealand Take Steps to Launch International Partnership NASSAU, BAHAMAS – The U.S. Department of Energy's (DOE) Assistant Secretary for Energy Efficiency and Renewable Energy Alexander "Andy" Karsner and New Zealand's Ambassador to the U.S. Roy Ferguson today signed terms of reference for the International Partnership for Energy Development in Island Nations (EDIN), an initiative to further the development of energy efficient and renewable energy technologies on island nations and territories.

What happens next?

January 2009 - Governor Declares NELHA '*Green Energy Zone*'

- NELHA is chartered with developing full Renewable Energy Capacity
- Green Energy Zone Legislation is passed including
    - Fast Track Permitting
    - Fast Track Procurement
    - TMK Wheeling
    - PUC free zone (i.e. no wheeling, transmission, Utility fees)
- MOU is signed with Kona Airport to provide cheap, renewable and supplemental power from NELHA to Airport

February 2009

NELHA partners with Kohala Center to create a study for the first Green Energy Zone and then more Green Energy Zones

January 2010

An Energy technology test site is created at NELHA with the help of DOE – HCEI and HNEI funding from Federal and State money

December 2012 - NELHA creates first Renewable Energy Park and the Green Energy Zone *Green Energy Model* = *GEM*

- ***GEM*** is brought to other islands in Hawaii
- Other Island Nations around the World

NELHA TENANTS

Alternative Energy Tenants

CELLANA, LLC

Cellana, LLC is a joint venture between HR Biopetroleum, a University of Hawaii, School of Ocean and Earth Science and Technology based company and Royal Dutch Shell Petroleum. One of the long term objectives of Cellana is to provide the underlying scientific research that will enable commercial production of biofuels from photosynthetic microbes. This company is still in developing sate.

Hawaii Natural Energy Institute

Hawaii Natural Energy Institute has a long term objective to establish a Hawaiian Hydrogen Power Park at the Gateway Center. Its goal is to develop a state-of-the-art facility that will have capabilities to support ongoing hydrogen and DER system test and demonstration projects. This project is still in development stages.

Keahole Solar Power, LLC

This partnership is constructing a 500 kilowatt thermal concentrating solar power electricity generating plant at the Gateway Center. This power plant consists of many parabolic trough solar collectors, thermal storage and expansion tanks, a cooling tower, and an Organic Rankin Cycle power block. The clean, renewable electricity generated from this solar power plant will be sold to the local utility company.

Hawaii County Economic Development Board

HCEDB promotes renewable energy, a state-of-the-art 2.5 Kw concentrator photovoltaic demonstration model developed by SolFocus of Palo Alto Research Center that has been assembled and installed at NELHA. Also a small cottage has been erected with household appliances to demonstrate the effectiveness of the photovoltaic model. The photovoltaic cells of this model have been rated at 30% efficiency. In the future, HCEOC intends to develop other renewable energy devices and fabricate demonstration models to be on public display at the Hawaii Gateway Energy Center.

SolFocus, Inc.

SolFocus, Inc., of Mountain View, CA, is developing concentrating photovoltaic (CPV) technology to drive down the cost of solar energy. Their solar panels utilize mirrors to focus the sun's energy, concentrating it 500 times onto high-efficiency solar cells that are twice as efficient as the average silicon solar cell. Using just 1/1000th the active material found in a standard solar panel, the balance of system is mostly aluminum and glass, both of which are the only exposed elements and are easily sourced worldwide. SolFocus is conducting its tropical testing at NELHA's Gateway Energy Center, taking advantage of the high solar insolation and proximity to the harsh maritime environment. A small (2.5kW rated) array is collecting data while helping to offset the buildings' electricity consumption. A 30 kW installation to perform reliability tests on the next generation of panels is presently under development.

W2 Energy Development Corporation

"W2 Energy Development Corporation is a California startup company developing a new methodology for harvesting wind energy, called the WindWing technology. It is designed to

extract a much higher percentage of wind energy from a given volume of wind force than the currently employed propeller driven turbines at a much lower cost and very little environmental impact. A current model of the WindWing is being tested in Santa Barbara CA and will be deployed at NELHA in the first quarter of 2009 to test in low velocity and high velocity coastal winds"

Aquaculture Tenants

Utilize NELHA's unique resources: natural seawater at different temperatures (cold deep seawater and warm surface water), winterless climate and low rainfall, to create optimum growing conditions for a wide range of marine organisms.

Big Island Abalone Corporation

BIAC operates a 10-acre aquafarm (one of the largest in the world) to serve the market for premium live abalone. The aquafarm currently produces 70 tons of live abalone per year. BIAC produces Kona Coast Abalone, a premium stock of Ezo (Japanese Northern) abalone. Kona Coast Abalone shipped live to markets in Japan, mainland USA, Hawaii, and soon to Hong-Kong and Korea. BIAC facilities include a hatchery, a nursery and abalone grow-out tanks. The product size ranges from 80 grams average (medium size) to 100 grams (large size). Location at NELHA provides a near-perfect environment for growing Kona-Coast Abalone.

Cyanotech Corporation

Cyanotech produces high-value microalgae-based products including nutraceuticals, pharmaceuticals, astaxanthin based NatuRose for the world aquaculture animal feed industry, BioAstin – a powerful antioxidant for human consumption, Spirulina Pacifica – a nutrient-rich dietary supplement, and phycobiliproteins-fluorescent pigments for the medical immunological diagnostics market. Cyanotech produces these products from microalgae grown at its 90-acre facility and distributes them to nutritional, supplement, nutraceutical, cosmeceutical, and animal feed makers and markets in more than 40 countries world wide.

High Health Aquaculture, Inc.

High Health Aquaculture develops and supplies certified pathogen-free broodstock to the global marine shrimp markets. HHA maintains SPF stock of all 4 major domesticated shrimp species.

Indo-Pacific Sea Farms

Indo-Pacific Sea Farms develops innovative technologies for the sustainable production of coral reef fish, plants and invertebrates. Indo-Pacific Sea farms has been operational at NELHA since

1994. Company's current products include certified captive-bread marine organisms for the saltwater aquarium industry, marine invertebrates, ornamental marine plants, algae feeds, live plankton, live rock and sand, and biologically active filter media.

Kona Blue Water Farms

Kona Blue Water Farms is the first integrated hatchery and offshore fish farm in the country for various valuable food fish species, including kampachi, mahi-mahi, and giant groupers. Kona Blue premiere achievement is Kona Kampachi, a premium sushi-grade Hawaiian yellowtail species. The company raises Kona Kampachi without depleting wild fish stock. The fish is grown in open ocean pens half a mile off the Kona coast that provides the fish with healthy clean environment to grow with no negligible impact on environment.

Kona Coast Shellfish, LLC

Kona Coast Shellfish LLC (KCS) began the construction phase of their Shellfish Hatchery/Nursery operations in January of 2007. They became operational by May of 2007 with sales of shellfish larvae and seed to West Coast customers. Current production includes Pacific oyster larvae and Pacific oyster seed and Manila clam seed. KCS currently employs 8 people and further expansion of operations continues. They anticipate the production levels to increase in 2008 as the worldwide demand for shellfish larvae and seed continues to grow.

Kona Cold Lobsters, Ltd.

Kona Cold Lobsters imports live lobsters and crabs from natural Atlantic fisheries and rejuvenates them in cold deep seawater holding pens for distribution throughout Hawaii and select Asian and Pacific destinations.

MERA Pharmaceuticals, Inc.

Mera Pharmaceuticals develops cost–effective, cutting edge photobioreactors for the industrial cultivation of microalgae for new microalgal products. Currently marketing astaxanthin-based products, the AstaFactor a human nutraceutical with powerful antioxidant properties and AquaXan, a natural pigment for shrimp and salmon feed.

Moana Technologies, Inc.

Moana Technologies is partnered with multinational group of established companies from the aquaculture industry together having the expertise to meet the challenges of shrimp farming in the 21st century and bring it to new levels of productivity. Through advanced R&D, Moana Technologies is developing nutritional and health solutions that will benefit the world's shrimp aquaculture industry.

NoriTech Hawaii Inc.

NoriTech plans to establish a site for cultivation of porphyra. The red seaweed porphyra, commonly known as nori, is widely recognized in the food industry as the sushi wrap. It is rich in protein, fiber, and minerals and is an ideal candidate to be used as an ingredient in the growing nutraceuticals market.

Ocean Rider, Inc.

Ocean Rider using captive aquaculture techniques continues to produce over 20 species of seahorses and accessories for the world aquarium pet market. Seahorses are threatened in their natural habitats by overfishing around the world, so development of such techniques is the key to their survival. Ocean Rider also offers interactive educational seahorse tours for the general public.

Pacific Aquaculture & Biotechnology, LLC

This firm produces brood shrimp for export to its parent company's operations in Indonesia. It occupies the site previously utilize4d by Kona Bay Marine resources.

Pacific Planktonics

Pacific Planktonics specializes in innovation, with a goal to develop methods to culture ornamental marine fish and shrimp for scale-up to commercial production, including optimization of larval live first feeds and growout for native Hawaiian species. Some of the species grown by Pacific Planktonics include reef fish, cleaner shrimp larvae, harlequin shrimp and wild plankton.

Royal Hawaiian Seafarms, Inc.

Royal Hawaiian Seafarms commercially produces *ogo* (edible sea vegetables) with sales of over two ton per week. The company also produces salt water tilapia and milkfish, and is investigating commercial production of edible sea cucumbers, *opihi* (Hawaiian limpets) and warm water abalone and marine fin-fish.

Taylor Shellfish-Kona

Taylor Shellfish, headquartered in Washington State, is one of the largest U.S. clam and oyster producers. The company maintains a nursery at NELHA where juvenile mollusks take a "winterless Hawaiian growout vacation" during critical early growth periods. Up to 400 million juvenile Manila clams and 10 million juvenile Pacific oysters are exported year round back to Washington for final growout or sold as seed stock to other growers.

Troutlodge Marine Farms Kona, LLC

Troutlodge grows Atlantic halibut and sablefish acquired through the purchase of the company from the previous owners in August of 2007. Utilizing the cold deep seawater and surface seawater to provide optimal temperatures to reach maximum growth for harvesting allows Troutlodge to decrease the average grow out time required for these cold water species. Troutlodge has begun conducting its own larval rearing trials with sablefish for the development of hatchery technology here at NELHA as well as maintain broodstock fish to determine optimal nutrition for egg production. Fish sales of Atlantic halibut continue, providing 200-400 lbs. of fresh fish per month. Marketing development of sablefish will begin as the fish reach harvest size.

Uwajima Fisheries

Uwajima Fisheries produces superior quality *hirame*, a Japanese coldwater flounder highly prized for Hawaii's sashimi and sushi markets. The company also produces *ogo, moi*, and milkfish (also known as *awa*) for local markets.

Water Bottling Tenants

Utilize the natural and abundant resource of the pristine, pathogen free 3000' deep ocean water accessed from NELHA.

Deep Sea Water International, Inc.

Deep Seawater International, Inc. produces desalinated bottled water "KONA DEEP" for domestic and global markets.

Enzamin USA, Inc.

Enzamin USA is using new applications of deep seawater to enhance a successful Japanese nutraceutical product line based on *Bacillus natto* and produce bottled water and mineral salts from the deep seawater resource for commercial sales to Asian markets.

Hawaii Deep Marine, Inc.

Hawaii Deep Marine is developing deep seawater based products for export. Desalinated seawater, salt and brine (*nigari*) and being developed for commercial sales to Asian markets.

KOYO USA Corp.

KOYO was the first tenant at NELHA to produce purified deep seawater-based drinking water starting in 2003. KOYO also the first tenant licensed to use a new trademarked NELHA logo to certify the source of 100% deep seawater. From its present site of 30 acres, KOYO produces a bottled water product "*Mahalo*," which consists of purified 100% Hawaii deep seawater, exported on a weekly basis to domestic and Japanese markets.

Savers Holdings Ltd.

Savers Holdings is still in developing stages to produce desalinated water for bottling and export to eh Asian markets including Korea and Japan.

RESEARCH, EDUCATION AND COMMUNITY SERVICE TENANTS:

Charter School Review Panel
Uses office space at NELHA to conduct its activities, which include the authorizing of public charter schools.

Georgia Institute of Technology
Georgia Tech conducts marine biota research at NELHA at various intervals.

Hawaiian Islands Humpback Whale National Marine Sanctuary
Hawaiian Islands Humpback whale National Marine Sanctuary is responsible for general public education, outreach, research and monitoring of Big Island marine resources. This has included monitoring the Hawaiian Monk seal population on the island, assisting local research groups in efforts to learn more about the humpback whale and their habitat and participating in marine conservation and education on the Big Island through a variety of outreach projects.

Oceanic Institute
The Oceanic Institute has leased a parcel of land at NELHA for some time, contemplating various possible uses over that time. These have ranged from a visitors' center, to a finfish research facility. Present plans are indeterminate.

Physics, Materials & Applied Mathematics, LLC
PM&AM conducts various research projects on a time-to-time basis at NELHA.

University of Hawaii Infrasound Laboratory (ISLA)
ISLA maintains an array of acoustic sensors to monitor the Pacific region for atmospheric infrasound signals to support the international Comprehensive Nuclear Test Ban Treaty as well as to gather signal evidence of Global geophysical and meteorological events.

University of Hawaii Sea Grant Extension Service
Supports long term economic development, stewardship, and responsible use of Hawaii's marine and coastal resources, working closely with NELHA and its tenants to improve the effectiveness of community outreach and education.

United States Coast Guard
The Coast Guard operates a lighthouse facility at Keahole Point, the westernmost part of the Island of Hawaii. Plans are to re-build the old structure during the next year.

West Hawaii Explorations Academy – Public Charter School

West Hawaii Explorations Academy is a public charter school, offers innovative full-immersion learning for secondary students based on student-run projects. WHEA won the Intel 2005 Schools of Distinction Science Award in Competition with over 3,000 high schools nationwide.

Gateway Tenants:

Friends of NELHA

Friends of NELHA is a non-profit group operating a program that provides outreach to support NELHA. Trained community volunteers make presentation to interested visitors at the Gateway Center.

Hawaii Island Economic Development Board

HIEDB is a private non-for-profit corporation that provides valuable information and contacts for area businesses and industries as well as key liaison to federal, state, county and private sector resources in financing, business planning, permitting, legal advice and other business services. HIEDB is a networking business organization that specializes in facilitating federal resource programs and implementation of economic development projects.

Tenants Coming to NELHA:

Kona-Halo

Kona-Halo plans to manufacture brine, mineral essences and salt from deep-sea water.

West Virginia University Research Corporation

Research about the carbon cycle and how the oceans naturally store carbon as dissolved organic matter.

CEROS continues to receive annual Department of Defense appropriations funding through the Defense Advanced Research Projects Agency (DARPA). In FY07, CEROS received $5.5 million and supported 12 projects. In FY08, CEROS will fund approximately 18 contracts for $8.8 million. In FY09, CEROS anticipates $9.9 million.

BACKGROUND: The CEROS Program was created under an initial grant provided by the DARPA in 1993 and has continued to receive annual defense appropriations funding. CEROS seeks to advance innovative concepts and new approaches to technology while fully leveraging existing facilities and infrastructure in Hawaii and demonstrating beneficial commercial utility for the Department of Defense. Since 1993, the CEROS research programs have funded a total of 218 projects at a value of over $82.9 million (FY93 – FY07).

MISSION:

a. Support the Department of Defense technology requirements;
b. Encourage leading edge R&D in ocean sciences and technology in Hawaii;
c. Foster use of ocean R&D facilities in Hawaii;
d. Provide an interface between specialized small businesses with expertise in ocean related R&D and DoD users of advanced technology; and
e. Develop avenues to ocean science expertise and facilities at the University of Hawaii

BUSINESS MODEL: CEROS solicits proposals through annual competitive solicitations. All proposals are evaluated by an expert panel for technical merit, innovation, and value according to criteria published in the solicitations. The CEROS Research Advisory Board determines the best proposals based on critical evaluations.

PRIORITIES: Five technical topic areas are identified in the legislation that originally funded CEROS

Ocean Environmental Preservation

Shallow Water Surveillance Technologies

New Ocean Platform and Ship Concepts

Ocean Measurement Instrumentation

Unique Properties of the Deep Ocean Environment

LONG TERM SUMMARY: Since 1993, the CEROS program has supported a variety of advanced ocean technology development projects. These projects have produced tangible results and products for the Department of Defense (DOD), unique advanced capabilities, commercial products, and potential breakthrough products for future development. Twenty patents and seventy-two technical publications have resulted directly from CEROS-supported projects. The program has also helped create and sustain technical development and jobs in Hawaii.

PROJECT TOPIC AREA	# OF PROJECTS	FUNDING
Shallow Water Surveillance Technologies	82	$36,441,111
Ocean Environment Preservation	32	$12,368,705
New Ocean Platform & Ship Concepts	34	$11,431,231
Ocean Instruments & Engineering Tools	54	$13,457,356
Unique Properties of the Deep Ocean Environment	13	$3,978,693
Improvements in Logistics, Staffing and Operations and Maintenance	3	$1,348,094
Total	**218**	**$82,902,440**

FY07 CEROS CONTRACTS

CONTRACTOR PROJECT TITLE	Contract Amount
Ambient Micro, LLC	
Development of Multi-source Ambient Power Supply for Portable Electronic Applications; Additional Tasking - Topic Area 5	$300,000
BAE Systems Spectral Solutions LLC	
Femtosecond-Pulse Laser Propagation in Seawater - Topic Area 1	$464,605
Camber Corporation	
Graphic Operations Order (Graphic OPORD) - Topic Area 6	$560,063
Cellular Bioengineering, Inc.	
Polymer Gel for Decontamination in Support of Maritime Military Operations - Topic Area 4	$437,188
Concentris Systems LLC	
Militarized Wireless Mesh Networking Technologies - Topic Area 1	$290,000
Concurrent Analytical, Inc.	
Sprayjet - Topic Area 2	$204,000
Makai Ocean Engineering, Inc.	
Dynamic Modeling of Multi-Line Towed Array Systems - Topic Area 3	$488,001
MIKEL, Inc.	
Hybrid Hyperbolic Multilateration and Doppler Measurement Model for UUV Navigation - Topic Area 3	$572,530
Navatek, Ltd.	
Novel Stepped Hull Form With Waterjet Propulsion - Topic Area 3	$452,111

Ocean Acoustical Services and Instrumental Systems, Inc.	
Autonomous Mobile System for Passive Acoustic Marine Mammal Monitoring - Topic Area 2	$361,445
Oceanit Laboratories, Inc.	
Super Performing Nanostructured Components for Fuel Cell Applications - Topic Area 6	$350,843
Pacific Hydrogeologic, LLC	
Fungi Spray Treatment for Degradation of PCB and PAH Contamination in Decommissioned Military Vessels - Topic Area 1	$288,570
	$4,769,356
12 contracts	

NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

FINANCIAL REVIEW

(For the period July 1, 2007 to June 30, 2008)

REVENUES

General Funds

State Funds*	$365,000.00
Subtotal	$365,000.00

Special Funds

Land Use Fees	$1,156,526.49
Royalties	$162,000.00
Reimbursable	$2,136,841.88
Interest Received	$91,443.61
Percentage Rents	$101,795.95
Subtotal	$3,648,607.93
TOTAL	$4,013,607.93

EXPENDITURES

General Funds

Salaries	$0.00
Kona Operations*	$365,000.00
Subtotal	$365,000.00

Special Funds

Salaries	$1,378,760.63
Operations(including OHA transfers)	$1,906,716.21
Subtotal	$3,285,476.84
TOTAL	$3,650,476.84

*Legislative subsidy to aquaculture tenants

FINANCIAL POSITION

Special Fund Cash Balance July 1, 2007	$1,159,737.00
State General Fund Appropriations*	$365,000.00
Special Fund Revenues	$3,648,607.93
	$5,173,344.93
General Fund Expenditures*	$365,000.00
Unrequired G/F Returned to State Treasury/DBEDT	$0.00
Special Fund Expenditures/journal entries	$3,064,516.87
Transfer to State General Fund From Special Fund	$0.00
Transfers to OHA-Ceded land	$220,959.97
Prior year adjustment	$0.00
Ending Special Fund Cash Balance 6/30/08**	$1,522,868.09

*Legislative subsidy to aquaculture tenants

**Subject to DAGS final numbers

FINANCIAL REVIEW

(CONTINUED)

NELHA CAPITAL IMPROVEMENT PROJECTS

Project	Amount
Onshore Distribution system	$540,000
Freshwater Upgrade	$50,000
CEMP Wells	$312,000
NELHA Master Plan 2007	$300,000
Airport Connector Road Design ($400K State and $500K Federal funds)	$900,000
Construction of distribution system expansion	$5,250,000

BOARD OF DIRECTORS

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Hawaii Cement
At Large-Governor's Appointee; term expires 06/30/11

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The Realty Investment Company, Ltd.
At Large-Governor's Appointee; term expires June 30, 2008

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At-Large, Governor's Appointee; term expires 6/30/10

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Center for the Study of Active Volcanoes University of Hawai'i at Hilo
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Hawai'i Strategic Development Corporation (HSDC)

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Representing Mayor of the County of Hawaii

Richard Hess
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Research Advisory Committee, Secretary

NELHA STAFF

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Lee Fausak, *Research Administrator*

Jacquie Brewbaker, *Program Manager for Outreach & Administration*

Debby Hansen, *Fiscal Assistant*

Donna Mau, *Contracts & Grants Administrator*

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