

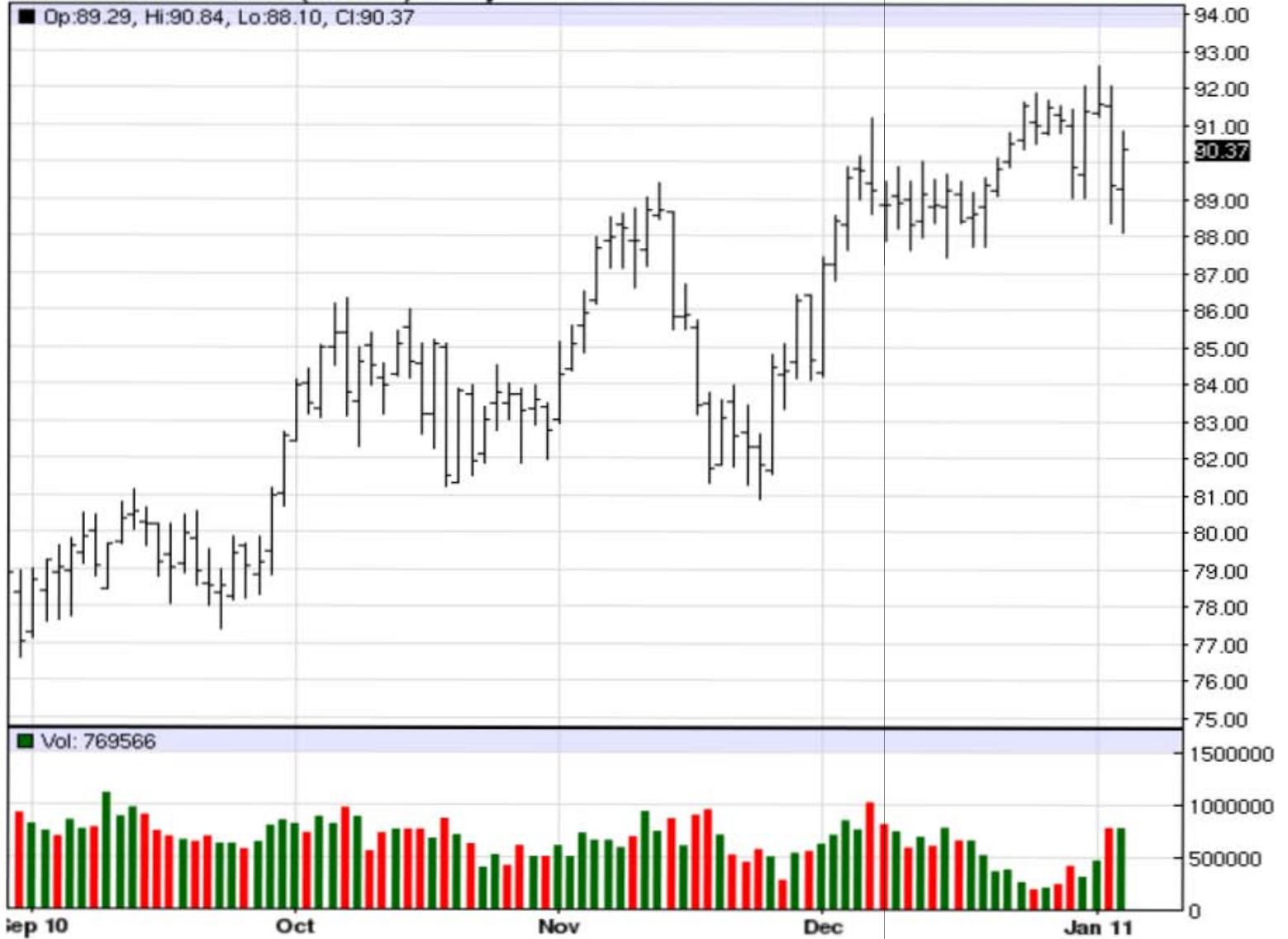


Legislative Update on Interisland Wind

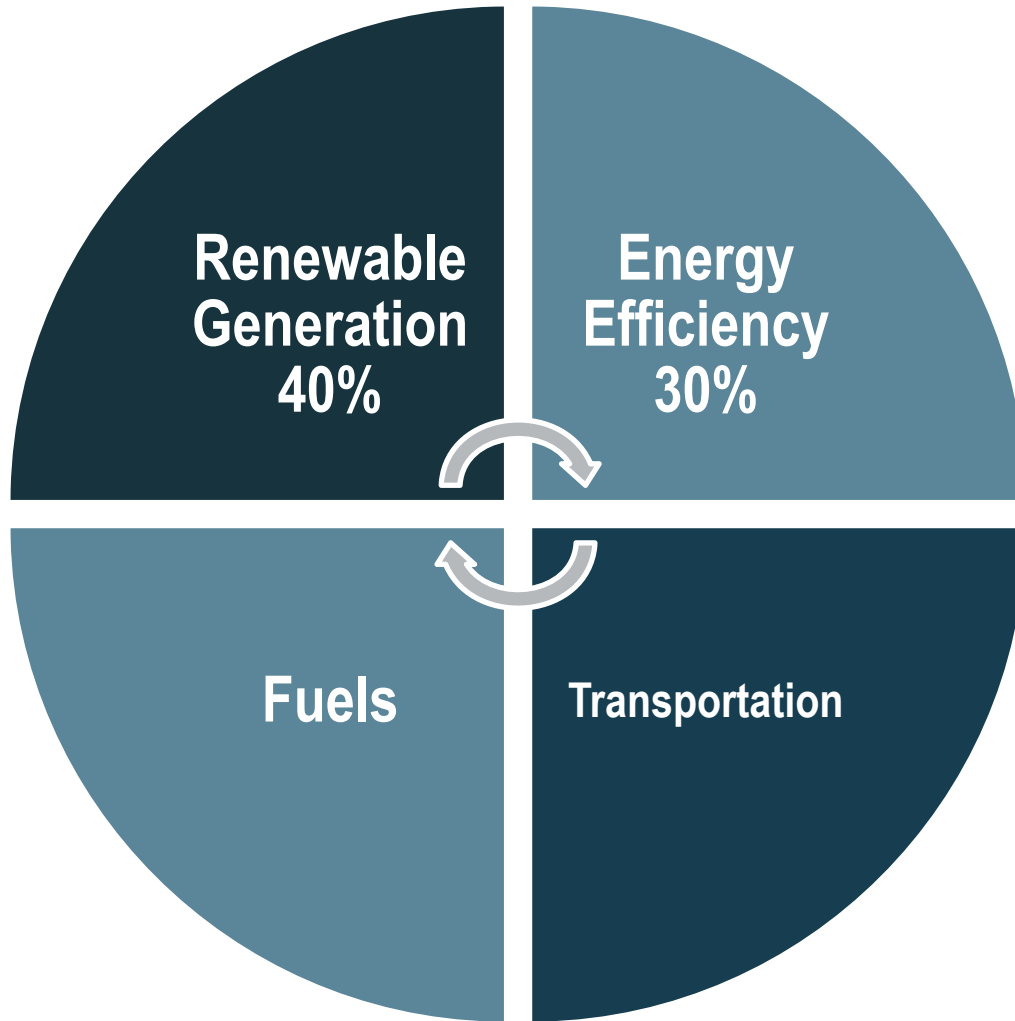


Price of Oil

CLG11 - Crude Oil WTI (NYMEX) - Daily OHLC Chart



Key Pieces of HCEI





Energy Efficiency

- Energy Efficiency Portfolio Standard goal of 4,300 gigawatt-hours (GWh) by 2030
- Public Benefit Funds for energy efficiency
- New, efficient building codes adopted by all counties
- The American Council for an Energy-Efficient Economy named Hawaii as one of the top four energy-saving states in the nation
- State agencies' energy consumption in fiscal year 2010 dropped 2.8% and the State paid 12.1% less than in fiscal year 2009; the Energy Services Coalition ranked Hawaii second in the nation for energy savings projects for State facilities



Energy Efficiency

- **Loan Loss Reserve**

- **\$3 million of Loan Reserve Fund can leverage from \$30-60 million in loans**
- **The LRF is a debt service reserve that covers part of the risk of lenders that make energy efficiency loans**
- **This results in the creation of an energy loan program with lower interest rates for consumers.**
- **Launch of Hawaii's Loan Reserve Fund program anticipated during Spring of 2011**



Renewable Portfolio Standard

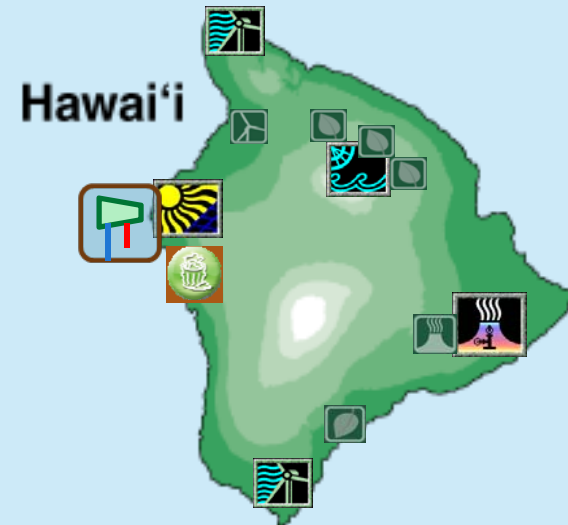
HRS 269-92 Renewable portfolio standards. (a) Each electric utility company that sells electricity for consumption in the State shall establish a renewable portfolio standard of:

- **Ten per cent of its net electricity sales by December 31, 2010;**
- **Fifteen per cent of its net electricity sales by December 31, 2015;**
- **Twenty-five per cent of its net electricity sales by December 31, 2020; and**
- **Forty per cent of its net electricity sales by December 31, 2030.**



Distributed Generation

- Feed in Tariff
 - **Allows for Photovoltaic Solar, Concentrated Solar, Wind, and Hydroelectric to come on to the grid at fixed rates**
 - **Currently 3.5 MW of new projects in the HECO queue**
 - **Tier 1 includes all islands and technologies where the project is less than or equal to 20 kilowatts-AC (kW-AC) in capacity.**
 - **Tier 2 includes systems sized greater than 20 kW-AC and less than or equal to:**
 - 100 kW-AC for on-shore wind and in-line hydropower on all islands;
 - 100 kW-AC for PV and CSP on Lanai and Molokai;
 - 250 kW-AC for PV on Maui and Hawaii;
 - 500 kW-AC for CSP on Maui and Hawaii;
 - 500 kW-AC for PV and CSP on Oahu Tier One – up to 20 kW on all islands
- Renewable Integration Support Project
 - **\$2.1M for projects on Moloka`i, Maui, and the Big Island**



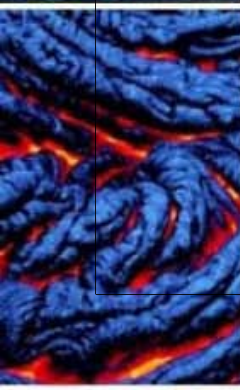
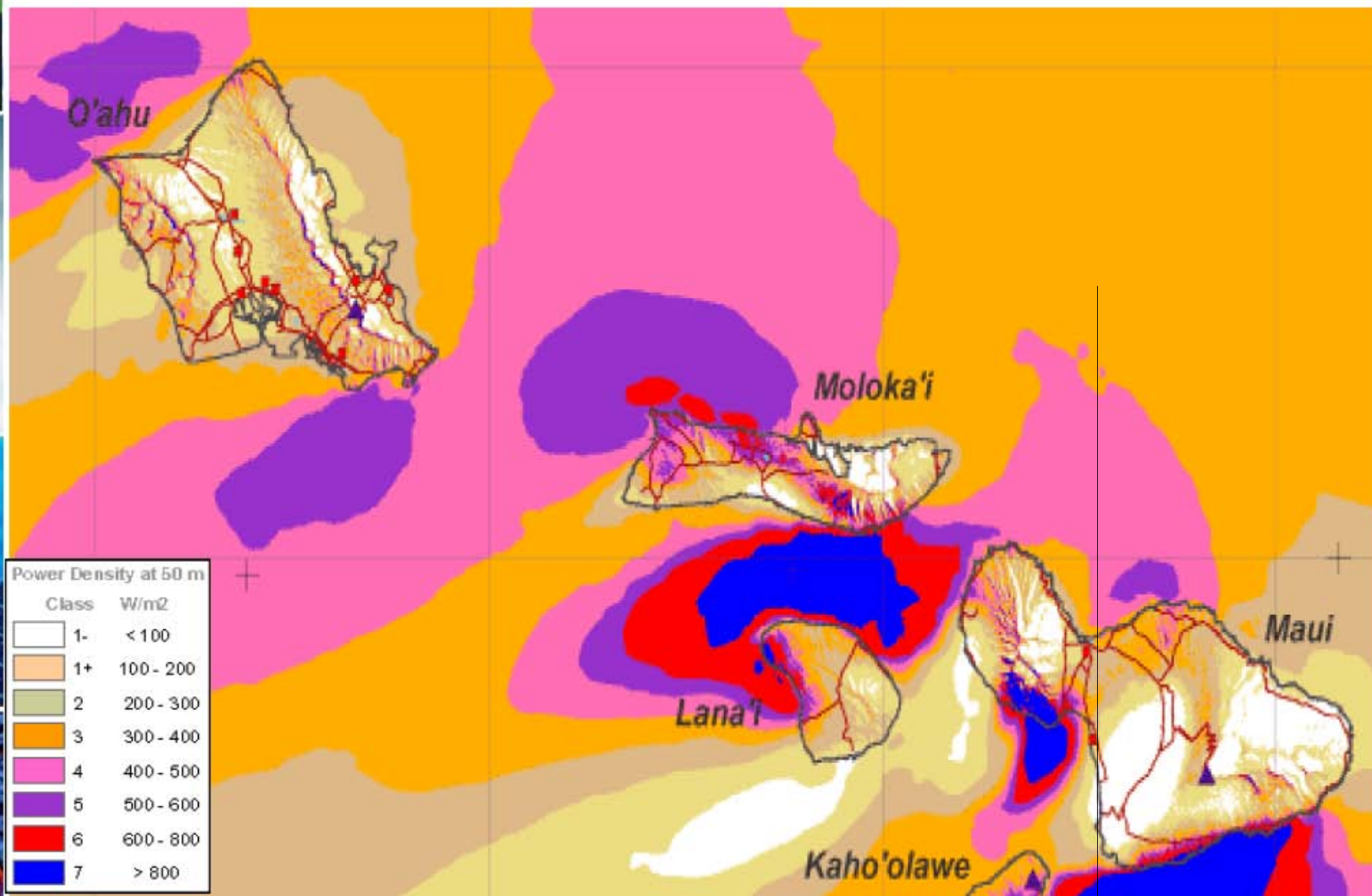
Existing

- Geothermal 
- Solar 
- Hydro 
- Biomass 
- Wind 
- Waste 

Proposed

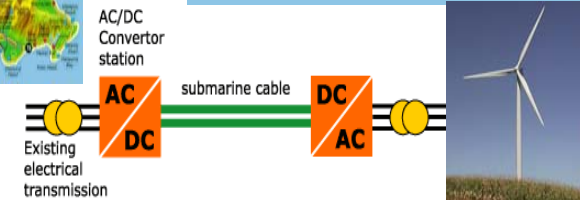
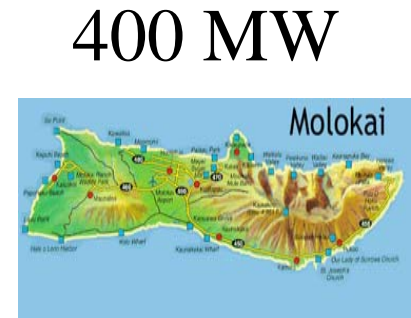
- Geothermal 
- Solar 
- Hydro 
- Biomass 
- Wind 
- Waste 
- Wave 
- OTEC 
- Seawater AC 

Wind on Moloka'i and Lāna'i



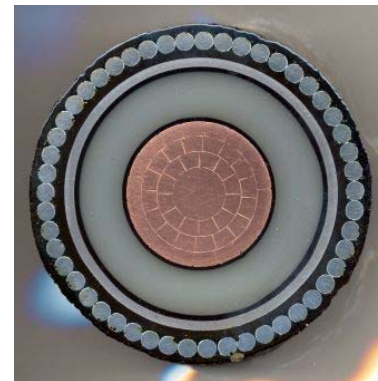
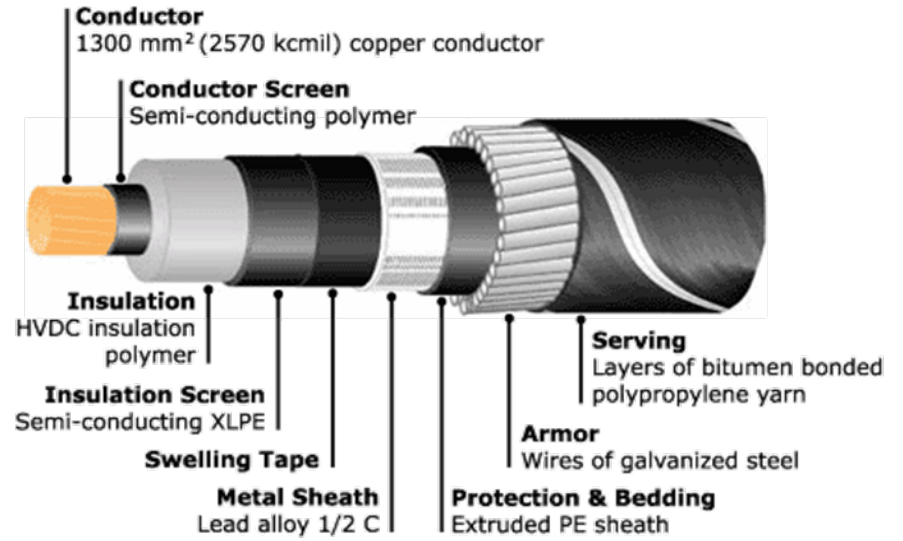
Interisland Cable Structure

- This project consists of three main components:
 - **Wind farms on Moloka`i and Lāna`i**
 - **An undersea cable system connecting the wind farms to O`ahu**
 - **Grid upgrades on O`ahu**



Undersea Cable

- The cables are approximately 4 inches in diameter depending on carrying capacity, about the size of a can of tuna.



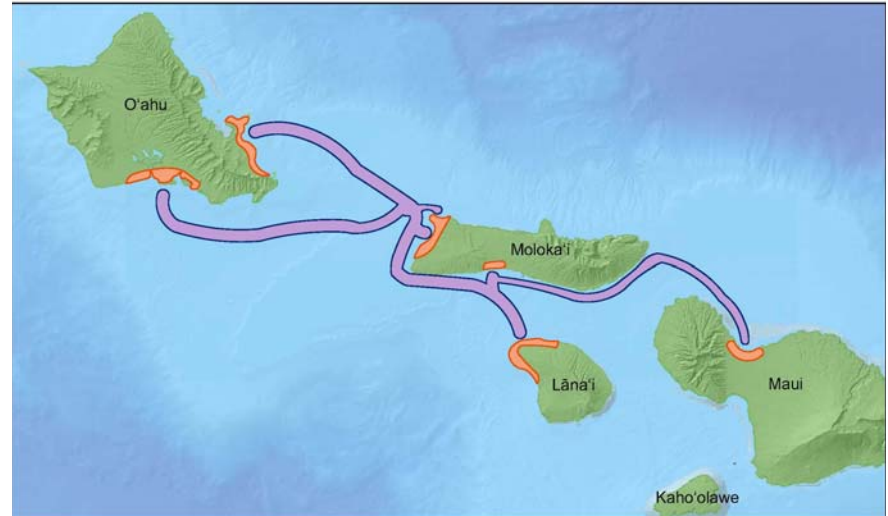
Converter Stations

- On each end of the cable is a converter station.
- The stations are typically 3-4 acres in size.
- The stations are approximately 2 stories tall.



Environmental Review

- Hawaii Interisland Renewable Program: Wind Phase
- Department of Energy is the federal lead agency
- Comment period for scoping the Programmatic EISPN ends in March 2011





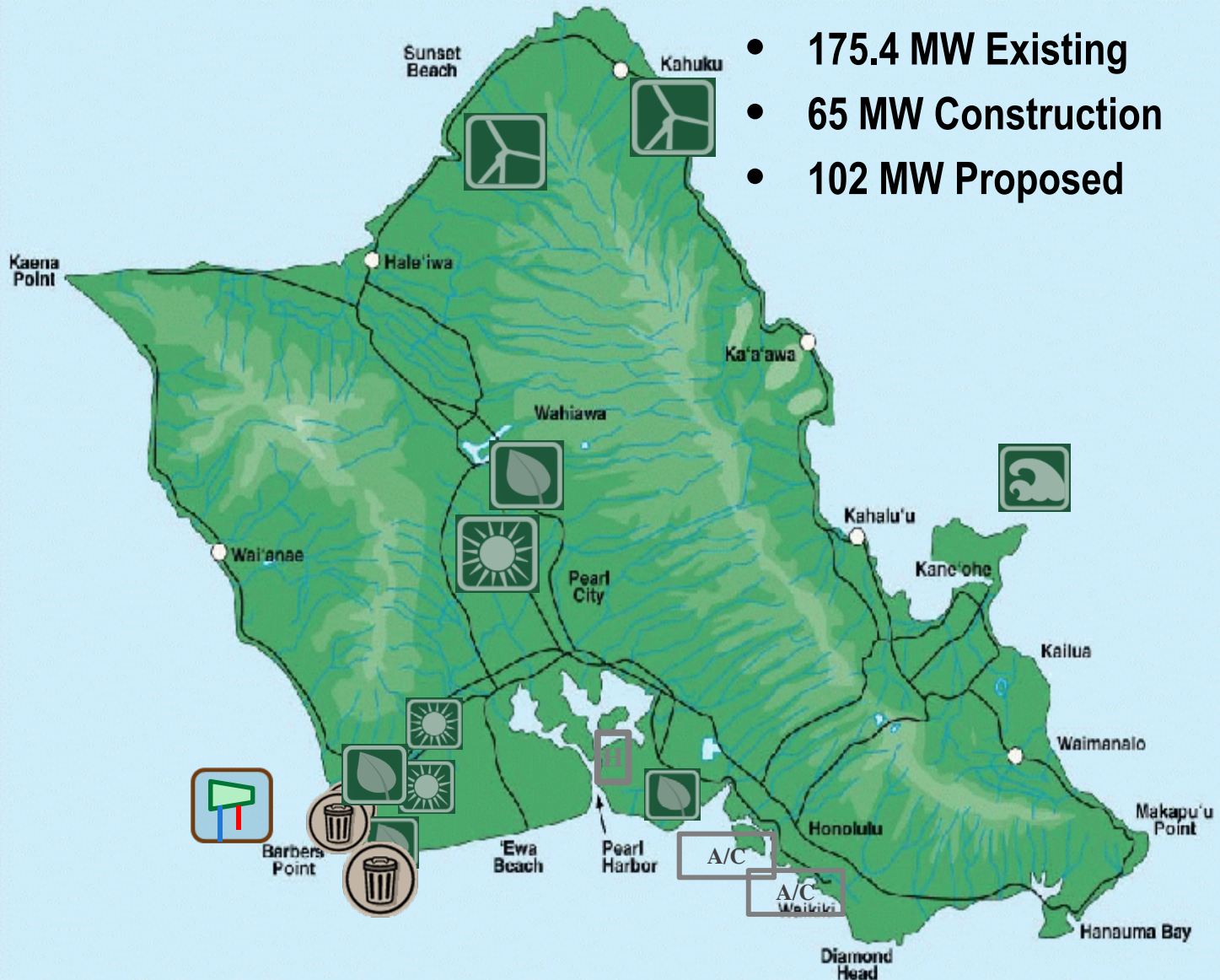
EISPN Comments

- www.hirep-wind.com
- Scoping Meetings
 - O`ahu Feb 1, Mckinley HS 5:30 pm –9:00 pm
 - Maui Feb 2, Pomaikai Elementary 5:30 pm –9:00 pm
 - Moloka`i Feb 3, Mitchell Pau`ole Community Center 5:30 pm –9:00 pm
 - Lāna`i, Feb 5, Lāna`i HS 9:00 am



Oahu – Existing and Proposed Renewable

- 175.4 MW Existing
- 65 MW Construction
- 102 MW Proposed





Hawaiian Electric
Company, Inc.

1

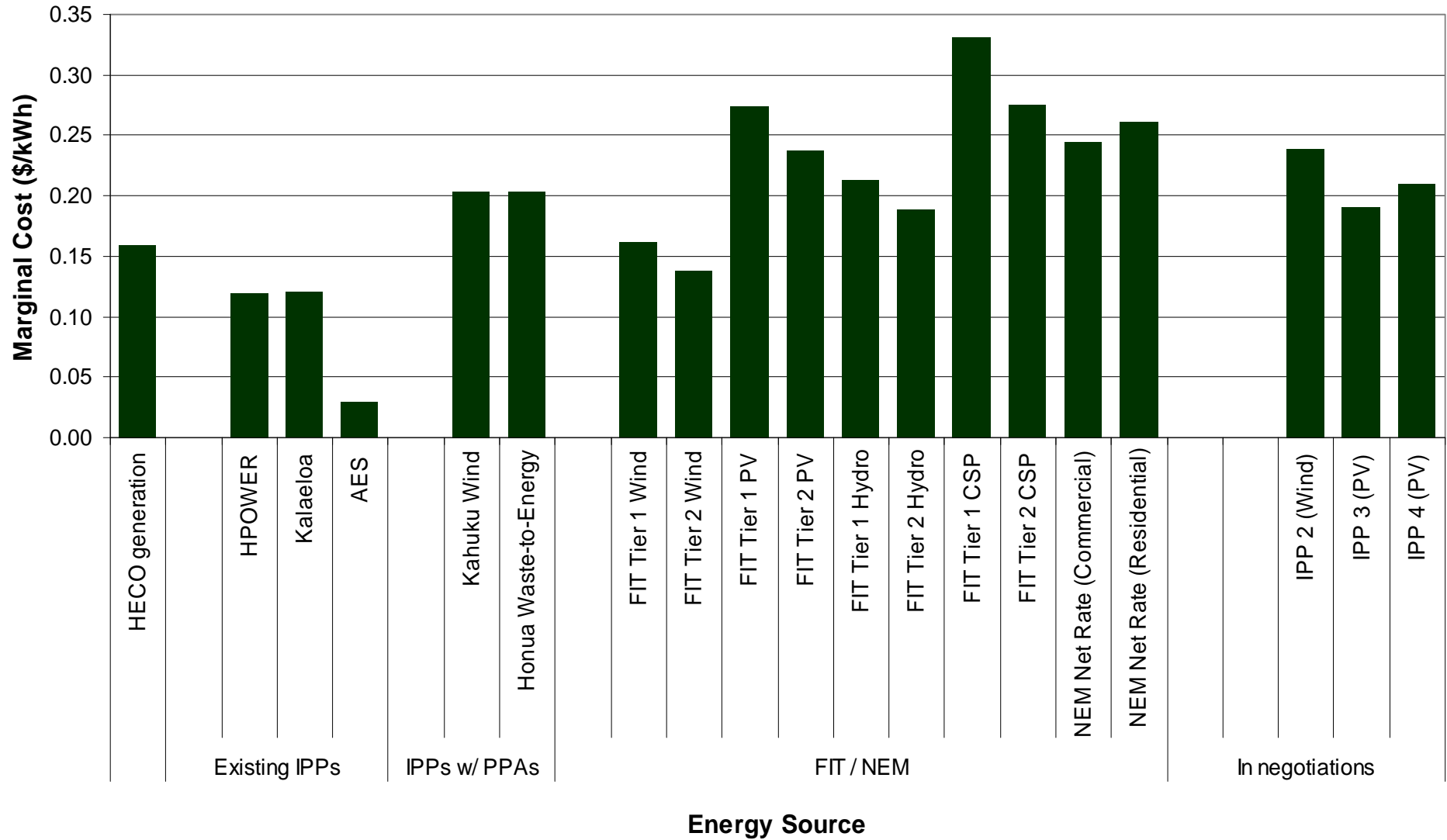
**Presentation to the Senate Committees
on Energy and Environment; and
Commerce and Consumer Protection**

Neighbor Island Wind and Inter-island Cable Projects

**Hawaiian Electric Company
January 11, 2011**



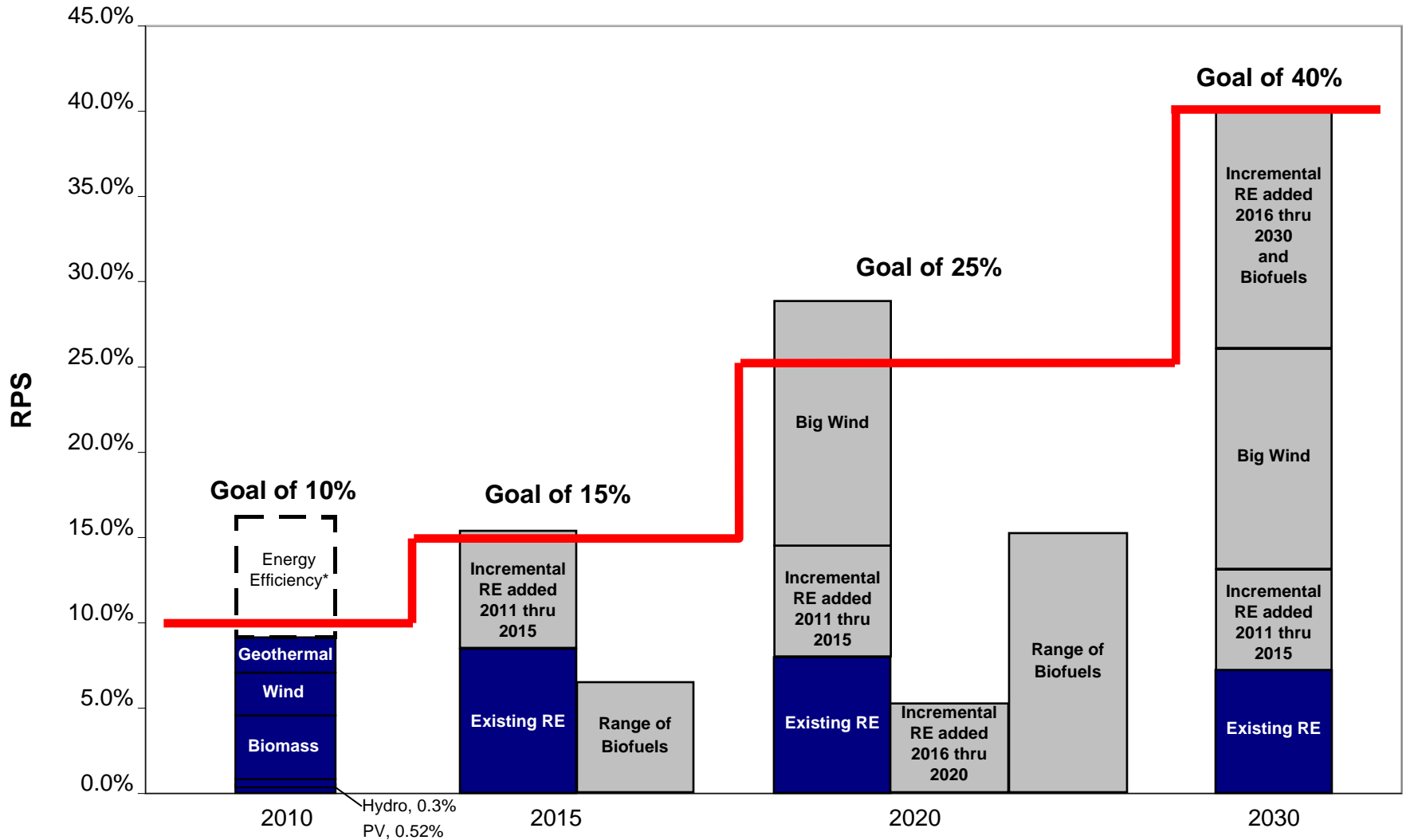
Oahu Energy Price Comparison





Hawaiian Electric Company, Inc.

HECO Consolidated RPS Scenarios



■ Existing Renewable Energy □ Renewable Energy Strategies to comply with RPS goals

* Counts towards RPS through 2014



Hawaiian Electric
Company, Inc.

Community Benefits in PPA

- Very unusual case
- Process
- Other venues
- Hawaiian Electric/Maui Electric Commitments
 - Levelized rates to Oahu*
 - 100% RPS by 2020*
 - PV-related grid enhancements*
 - PAYS-like program*
 - Contribution to Lanai Community Fund
 - Youth program sponsorship
- Castle and Cooke Commitments





January 11, 2011

**Lānaʻi Wind Farm Update
Senate Committees
Energy & Environment
Commerce & Consumer
Protection**



**Castle & Cooke
Renewable Energy**



Identify the Problem

Create the Solution

Execute

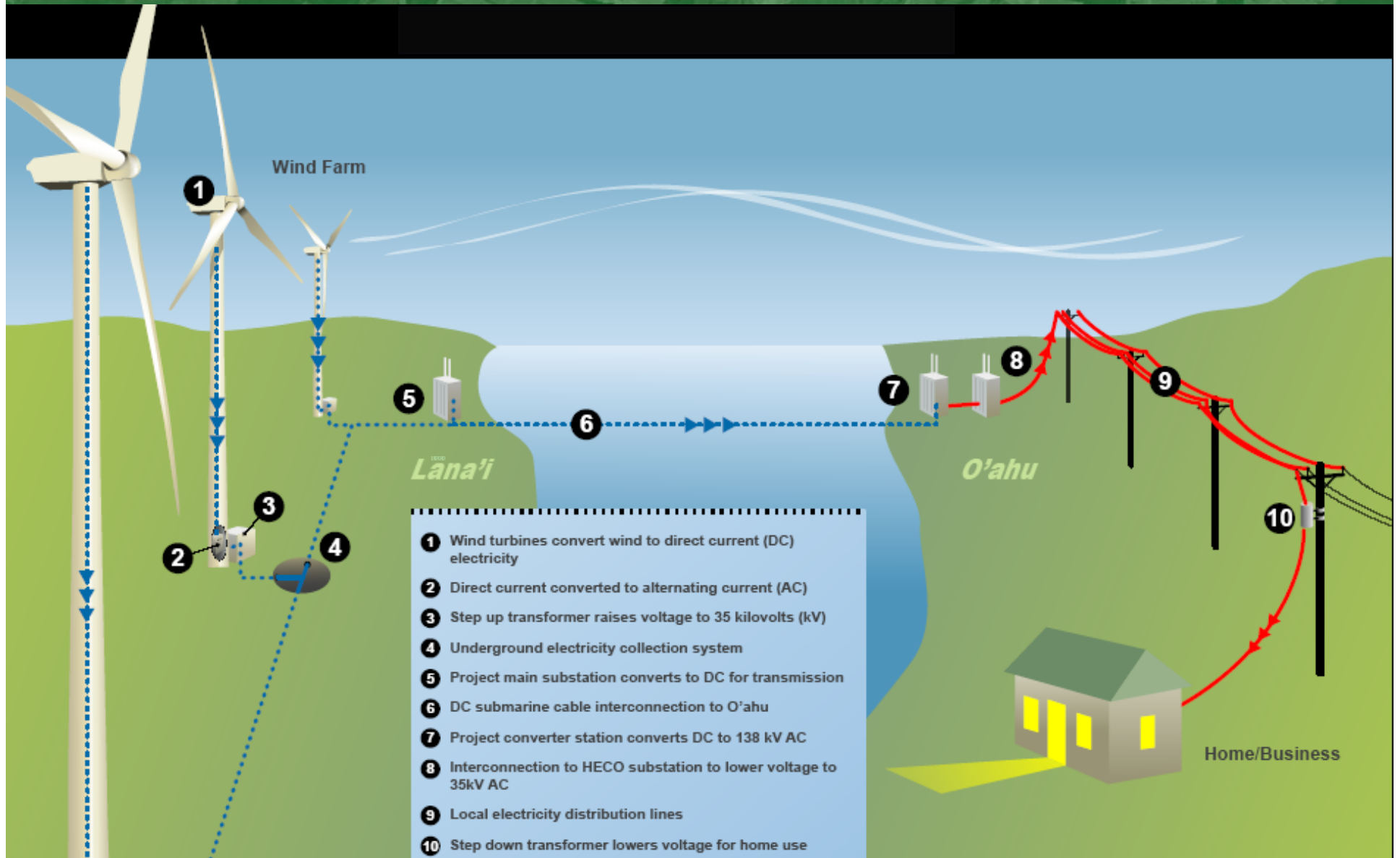
Lānaʻi wind farm status

- 2004 Jun - Renewable Portfolio Standards (RPS)
- 2007 Aug – 1st Meteorological tower installed on Lānaʻi
- 2008 Mar - 5 additional Meteorological towers installed
- 2008 Jun - RFP for renewable energy issued by HECO
- 2008 Sep – Castle & Cooke proposed 400MW & cable to Oʻahu
- 2008 Oct - Energy Agreement between State and HECO
State assumes responsibility for marine cable
- 2008 Oct – EIS Prep Notice filed by Castle & Cooke
- 2008 Dec - “Big Wind Agreement” signed with HECO
- 2008 Dec – EIS suspended pending cable progress;
Wind data collection and community outreach continued

Lānaʻi wind farm status (con't)

- 2010 May - State retains AECOM for EIS preparation
- 2010 Sep - State retains Navigant for Cable expertise
- 2010 Nov - PUC requires HECO to:
 - ✓ Start negotiations with Big Wind developers,
 - ✓ Execute term sheet within 4 months:
 - agreement of all material terms
 - scope of project
 - manner of which energy to be delivered
 - projected in service date, key milestones, concept/phasing
 - performance standards
 - pricing
- 2011 Jan - HECO and Castle & Cooke announce agreement on pricing and community benefits

Lānaʻi Wind Energy Conversion



Number of Turbines & Land Area

<u>Turbine Size</u>	<u>200MW</u>	<u>400MW</u>
3.6 MW	56	112
3.0 MW	67	134
2.3 MW	87	174
Land Area (acres) 100% owned by Castle & Cooke	Less than 12,800	~ 12,800

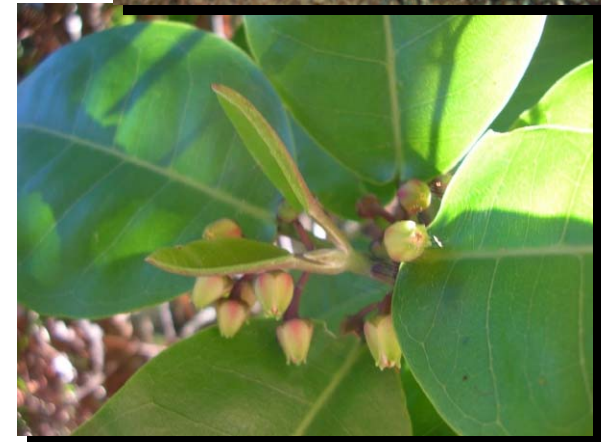
Lānaʻi Wind studies completed by Castle & Cooke Renewable Energy

25+ studies including:

- Cultural / Archeological
- Bird Studies
- Wind studies
- Engineering / Logistics
- Infrastructure

Project EIS to address

- Archaeological Inventory Survey
- Cultural Impact Assessment
- Bird Surveys
- Botanical Surveys
- Views
- Infrastructure and Utilities
- Social / Economic Impacts



Lānaʻi Wind Farm Benefits

- Reduces Hawaiʻi's dependence on foreign oil – saving Hawaiʻi \$millions annually
- Clean Energy from abundant renewable resource
- Stabilizes electrical rates, reduces impact from foreign oil price increases
- Potential to levelize electrical rates for Oʻahu and Lānaʻi
- Diversifies Lānaʻi economy; reduces strain of economic cycles
- Jobs created on Lānaʻi and indirectly throughout Hawaiʻi
- Infrastructure on Lānaʻi improved (Kaumālapaʻu Harbor, roads and water infrastructure)
- Tax revenues for public services increased
- Community benefit opportunities created

200 MW Lānaʻi Wind: Hawaiʻi Economic Impact

	Hawaiʻi Workers		Hawaiʻi Total	
	Jobs direct & indirect	Wages / Salaries		Economic Impact
Construction Period	1,121	\$ 60,290,000	\$	152,410,000
Operations - <u>Annually</u>	36	\$ 1,810,000	\$	5,850,000
Operations - 20yrs		\$ 36,200,000	\$	117,000,000

Based on: Department of Energy's National Renewable Energy
Lab's Jobs & Economic Development Impact Model

200 MW Lānaʻi Wind: Hawaiʻi Economic Impact

	20yr total	Annual Average
Total State Taxes	\$142 Million	\$7 Million
Federal Income Tax	\$363 Million	\$18 Million
Megawatt hours of clean renewable energy	17 Million	850,000
Barrels of Oil	30 Million	1.5 Million
Households powered	2.4 Million	120,000

Community Outreach

70+ meetings over the past 4+ years including:

- Annual public “town hall” community meetings (2007, 2008, 2009, 2010)
- Community-wide meetings / workshops
- Community Listening workshops
- Lāna‘i Makani Group (advisory)
- Small group & individual meetings
- ILWU/Carpenters outreach
- Employee outreach
- Educational tours
- EIS process / meetings
- Lanaiwind.com website


Lānaʻi Community Concerns

- Reduced Lānaʻi electric rates
- How does Lānaʻi benefit?
- Why does all the wind power go to Oʻahu?
- Hunting & Fishing
- Public Access
- Economy / Jobs
- Cultural / Archaeological
- Construction impacts
- Bird impacts
- Views

Community Benefits

Castle & Cooke commits to the following, subject to PUC approval of the Purchase Power Agreement and upon commercial operation:

- Establish a Lānaʻi Community Benefits Fund from 1% of gross revenue for broad based Lānaʻi benefits, including \$100,000 to Lānaʻi Culture & Heritage Center
- Maintain employment levels on Lānaʻi
- Hunting and fishing access
- Opportunity to purchase fee-simple property for existing tenants
- Employment priority for construction and operations to qualified Lānaʻi workers
- Removal of wind facilities when no longer in service
- Contractors required to meet archeological and cultural protocols
- 5,000 acres reserved for bio-fuel crop, or other diversified ag or ranching
- \$250,000/year for Lānaʻi Hale watershed preservation
- \$500,000/year for Lānaʻi Water System infrastructure improvements

A close-up photograph of a parasitic plant, likely a dodder, showing a dense network of thin, yellow, fibrous roots. Small, white, tubular flowers are visible at the bottom of the root system. The background is a solid green color.

**“The opportunity to reduce
Hawaii’s dependence on
foreign oil is now;
we just need the courage
to move forward.”**

Harry Saunders, President Castle & Cooke Hawai‘i

Mahalo

Identify the Problem

Create the Solution

Execute Now

HARRY SAUNDERS

President

Castle & Cooke Hawai'i

atsukamoto@castlecooke.com

Ph: (808) 548-4811

**Castle & Cooke
Renewable Energy**





Moloka'i Wind Project Update

Legislative Briefing

January 11, 2011

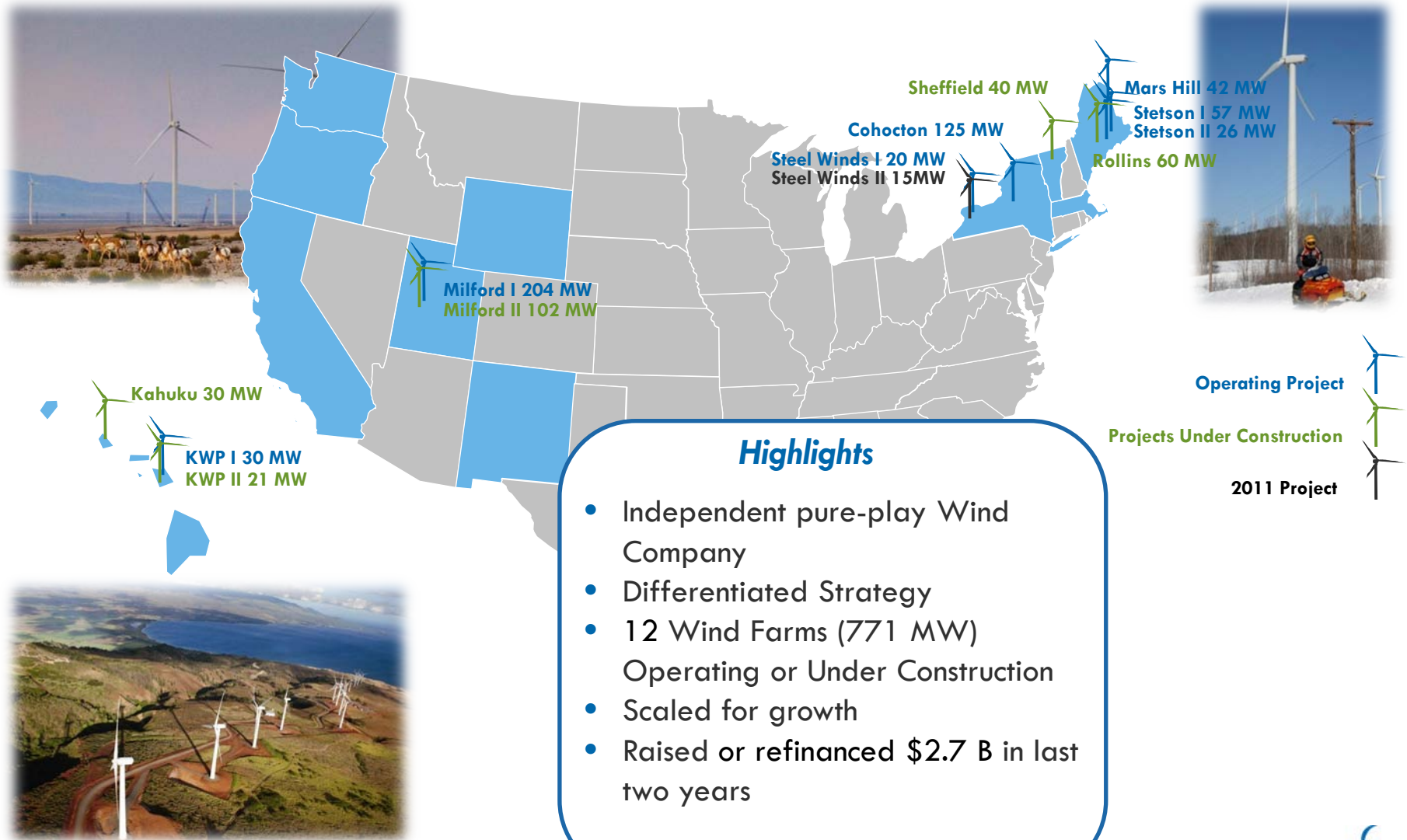
First Wind

- Independent wind energy company
- HQ in Boston, MA. Offices in Honolulu, ME, VT, OR, CA & Wash DC
- 12 operating and under construction projects with capacity to generate up to 771 megawatts of power
- In Hawai'i since 2004. Staff of 17 on O'ahu and Maui
- Partnership in Hawai'i with Makani Nui Associates, a Maui-based company



Kaheawa Wind Power I, Ukumehame, Maui

First Wind Today – Projects & Markets



Highlights

- Independent pure-play Wind Company
- Differentiated Strategy
- 12 Wind Farms (771 MW) Operating or Under Construction
- Scaled for growth
- Raised or refinanced \$2.7 B in last two years

First Wind - Hawai'i Projects



Kawailoa Wind (O'ahu) 70 MW



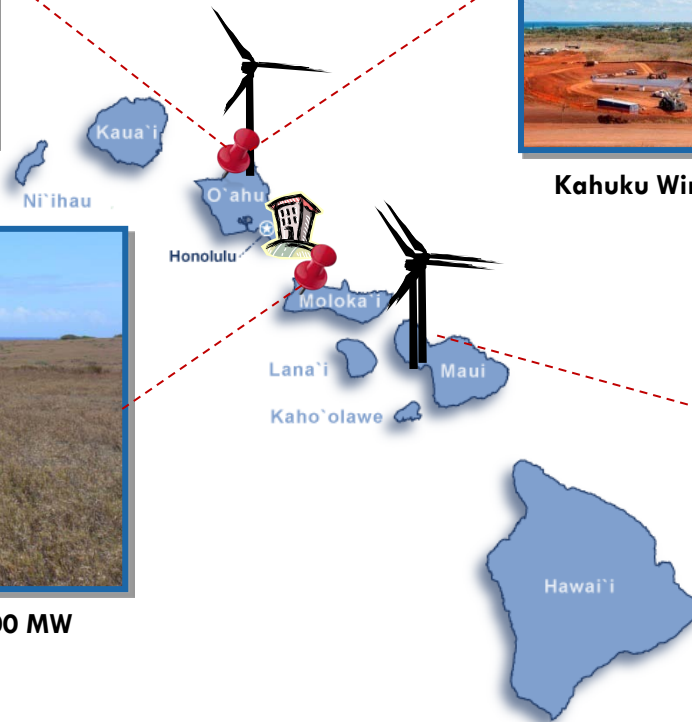
Kahuku Wind (O'ahu) 30 MW



Ikaika Wind (Moloka'i) 200 MW



Kaheawa Wind I & II (Maui) 51 MW



Operating & Under Construction



Project in Development



First Wind Office in Honolulu

Track Record in Hawai'i

Development Steps:

- Meteorological Studies
- Secure Land Rights
- Community Discussions & Benefits
- Power Purchase Agreements
- Interconnection Studies
- Environmental Studies, Permits & Approvals
 - Habitat Conservation Plan
 - EA/EIS
 - Cultural/Archaeological
 - FAA, and many more...
- Engineering & Design
- Building Permits



Even with experience, a long, complicated process

Community Benefits

First Wind's Approach:

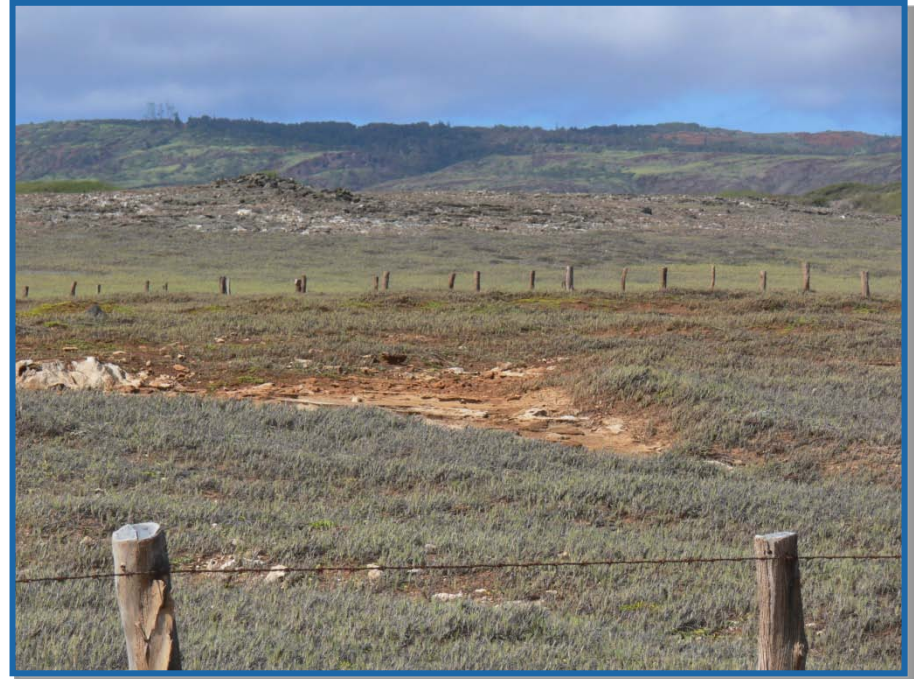
- Talk with Moloka'i residents about proposed plans, traditional land uses, cultural sites, potential impacts
- Moloka'i residents should determine the most appropriate benefits for their community
- Since 2007, Moloka'i residents identified priorities including lower electric rates, renewable energy, job-training and access to the land
- Benefits should be provided by First Wind, HECO & the State



Ikaika Wind Project on Moloka'i

Ongoing development activities since 2007:

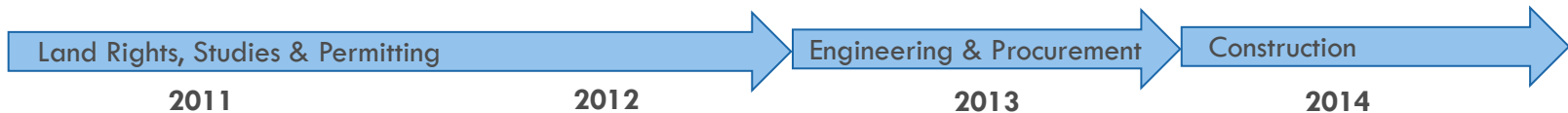
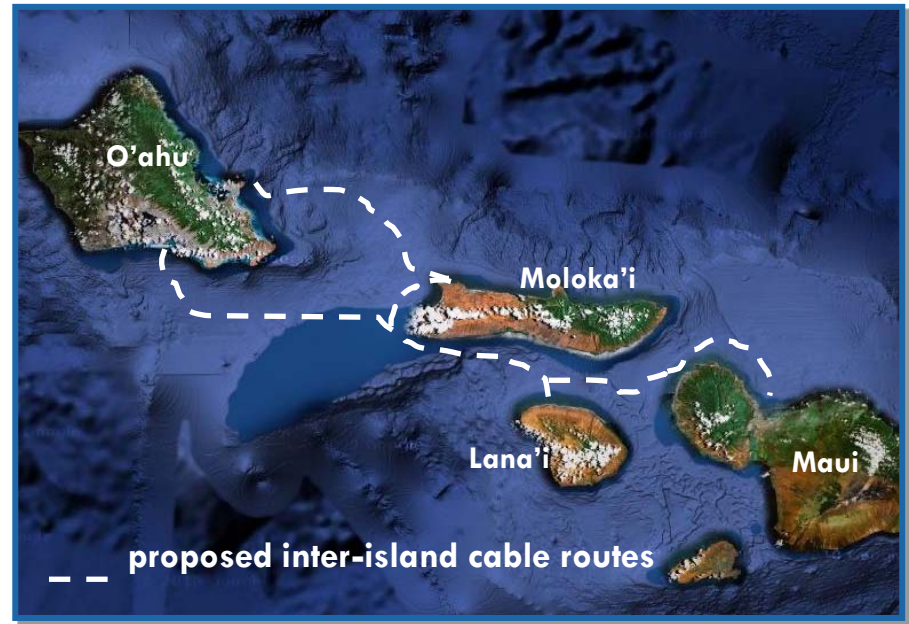
- Community discussions – broad support for wind farm concept, but not universal
- Meteorological study
- Avian & bat studies
- Continued work on securing land rights
- Additional work to be done: more meteorological studies, continuing community discussion; cultural, archaeological, botanical, biological studies



Big Wind Inter-Island Cable Coordination

Success requires working together:

- Coordinate permitting, financing, construction timelines
- Follow correct permitting process
- All stakeholders contribute to community benefits
- Advantages of pursuing two wind farms in parallel:
 - Reliability
 - Benefit opportunities for both communities
 - Increase chances of success



Kahuku Project



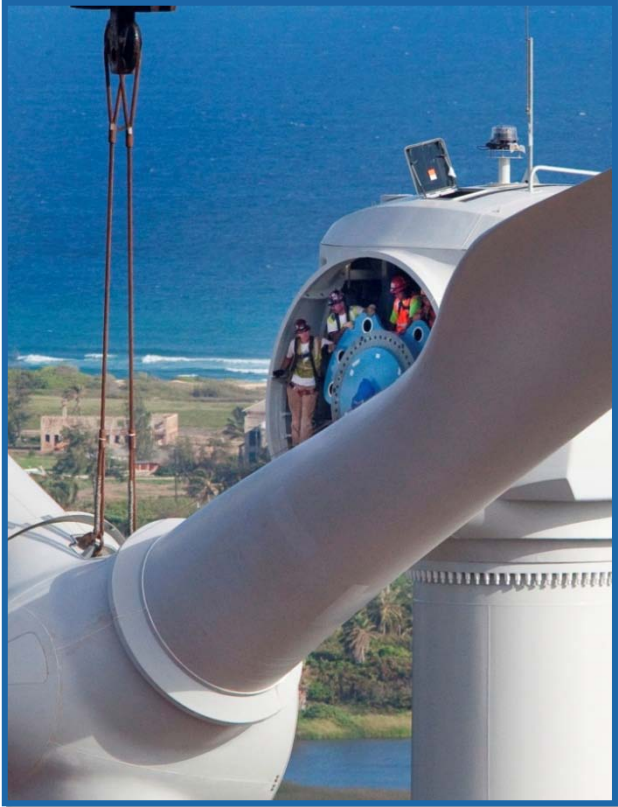
Kahuku Project



Kahuku Project



Kahuku Project



Kahuku Project



Mahalo!





first wind



FIRST WINDSM



CLEAN ENERGY. MADE HERE.

WINDMILL POWER PLANT ON LĀNA'I?

Our Position: At this time, Lānaʻians For Sustainable Growth for LSG), oppose the “wind farm” project, because we do not see that the potential benefits outweigh the environmental, cultural, natural beauty, social, and economic impacts to Lānaʻi and its community.

- Facts About the Project**
- None of the power generated will be used on Lānaʻi
 - The project could consume – and forever alter – up to 22,000 acres – 1/3 of Lānaʻi
 - Each tower will be over 400 ft. tall – as tall as the First Hawaiian Bank Building, Hawaiʻi’s tallest building, blocking private views
 - Serious fears will come to the cultural significance of the area
 - A multi-acre “teach plant” will have to be constructed
 - An inverter station either 1 acre by 3 stories tall, or 9 acres by 1 story will need to be built somewhere Poʻhaku shoreline
 - C&C will make many millions-of-dollars and the community will get . . . ?

About our Position Our position was carefully considered and not hastily arrived at. Over the past 18 months, LSG has been working hard to gather community input about what’s important and what needs to be changed. We’ve held many small group meetings, conducted a random survey, held several focus groups, and hosted several large community gatherings. Our decision is based, in large part, on community input.

Committed to the Island and the Community - While LSG is unable to support this project at this time, we remain committed to ensuring that this project is vetted through a fair process, and that the community is heard. LSG has supported, and will continue to support and host public meetings regarding the project.

For more information, visit www.lanaiisg.org or email lanaiisg@gmail.com

Lānaʻians For Sustainable Growth is a non-profit entity that serves as an advocate on behalf of the Lānaʻi community on a variety of issues impacting our island, community, and way of life.

We envision LSG to be a regular, decision-maker community supported advocate on behalf of Lānaʻians regarding the economic, social, cultural, environmental and other issues with focus of our island and its community.





Lifting Lānai‘ans’ Voices

Lānai‘ans For Sensible Growth

**Legislative Presentation
January 11, 2011**

About LSG – Our Values



- Cooperation
- Respect
- Responsibility
- Relationships
- Trust
- Kumpang
- Reverence
- **Aloha**



About LSG - History



- Grass-roots group formed over twenty years ago; 250+ members
- Responsible for protecting Lānaʻi's:
 - Rich historical & cultural history
 - Lānaʻi Cultural Heritage Center, Archaeological committee
 - Water resources
 - Water Advisory Committee, Lānaʻi Water Development & Use Plan
 - Recreational resources
 - Beach Park Council

About LSG - Community Organizing



- Shift in activity from monitoring to organizing
- LSG has spent the past 24 months and thousands of hours gathering community input about:
 - important issues to Lānaʻians;
 - values Lānaʻians hold sacred;
 - what Lānaʻians want for the keiki and kupuna; and
 - what they know and feel about the proposed wind power plant project.

Methodology



Multi-prong approach, tools include:

1. Talk Story sessions;
2. Blind, Community-wide Survey;
3. Focus Groups; and
4. Community Meetings

Professional assistance from:

1. HI Alliance for Community Based Economic Develop.
2. UH School of Social Work and Dept. of Urban and Regional Planning

#1 Talk Story Sessions



- Small, group interviews in Lānaʻians' homes
- +80 individuals, representing +120 families
- Participants included: Native Hawaiians, hunters, fishermen, business community, youth, long-time plantation workers, luxury home resident
- Rich, qualitative data from Lānaʻians, who typically don't show up at meetings

Lifting Lāna‘ians’ Voices



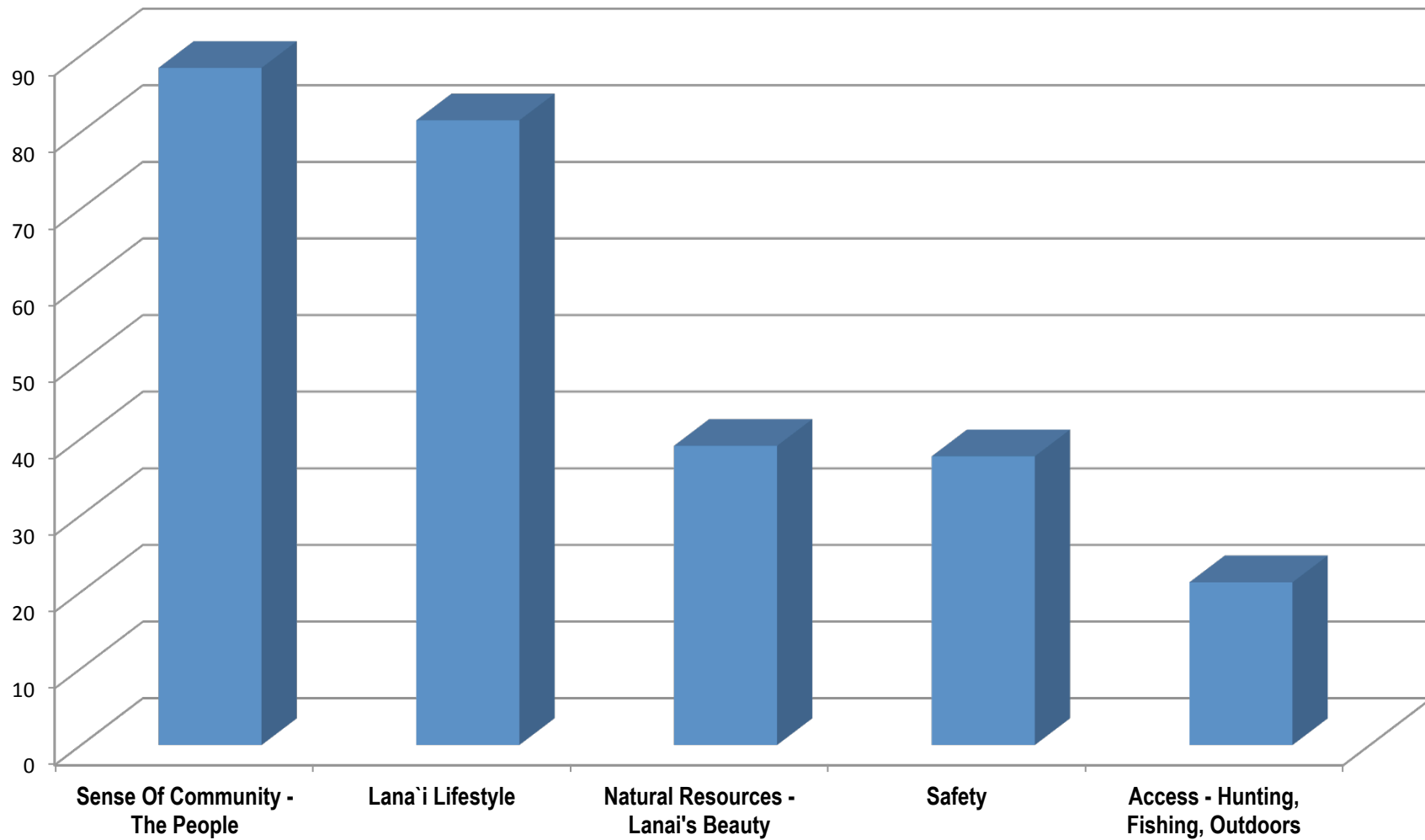
- “We came here for the physical beauty of the island and the sense of community. Our friends elsewhere don’t have the same type of community as we do . . . [.]”
- “People are scared of losing their jobs and not being able to provide food for their family. There are no jobs. Plenty guys getting laid off.”
- “I was born in the Philippines and moved here as a baby. I worked construction but I would like more options . . . more opportunities.”
- “We have to take care of our kupuna here; we know one family who had to take their dad to O`ahu. We know 3 other families like that.”
- “They shut down the swimming pool and community facilities – what’s here for the kids?”
- **“The company did a lot for this place, they took care of us for 14 years. But the day I left, I felt free.”**

#2 Survey



- Island-wide, random or blind community survey
 - 400 randomly selected homes; 156 responses
 - 95% confidence; +/- 7.5% margin of error
- Demographics represent 2000 U.S. Census data
 - 46% Filipinos
 - 21% White
 - 11% Japanese
 - 10% Hawaiian
- Survey instrument built with data from Talk Story

Most Important Things



Legislative Presentation

Lifting Lāna‘ians’ Voices



Lāna‘ians express their thoughts about the wind power plant project:

- “Another project to take something away from Lanai”
- “Benefit landowners only”
- “Eye sore, restricted access.”
- “Experience with solar farms = no electricity bill decrease [no] jobs for Lāna‘ians .”
- “It will do nothing for Lāna‘i”
- “[B]e good if electricity came to homes here”
- “Jobs for non-Lāna‘ians”
- “Keep Castle & Cooke financially [safe and] not go out of business.”
- “No stop hunting and fishing.”

#3 Focus Groups



- +30 participants
- Participating groups:
 - Cultural group; Business group; Service providers for kupuna/community; Youth-education, secondary education and career training; Hunters/fisherman; Social services/religious services
- Validated comments, value statements, data gathered in Talk Story sessions and community survey

#4 Community Meetings



Hosted many community meetings:

- HECO Informational Session: +100 people
- Block Party: + 250 people
- Informational Debriefings: +60 people
- Co-hosted two (2) Castle & Cooke community meetings in 2010: +150 people
- Monthly information sharing at farmer's market
- Office of Sen. Daniel K. Inouye meeting

All The Work, To What End?



Organizing process & collected data allows for an organic, community-driven effort to craft a:

A Shared Vision & Decision Framework

- Help decision making on development projects;
- Provide community input to decision makers;
- Put forth a vision for Lānaʻians about what's important for our island, our community and our families.

Our Sense of Place, Our Rural Lifestyle

1. Perpetuate our history, stories, and historical and cultural places
2. Maintain our rural character
3. Protect and manage natural resources through community stewardship

**WORKING
TOGETHER
TO SHAPE
OUR FUTURE**

Our Livelihood

1. Create a new economic vision to diversify our economic base and create stable jobs for residents
2. Encourage entrepreneurship by increasing educational, training, land control and ownership, and new market opportunities
3. Stimulate economic renewal by conducting feasibility analyses and attracting resources and investment partners for new economic development options

Our Community

1. Strengthen our health, medical and social support system, especially for our Kūpuna
2. Increase educational, training and recreational opportunities for all, especially our youth
3. Nurture and maintain our culture of sharing and caring

LSG's Position



“At this time, LSG is opposed to the proposed wind farm project, because we do not see that the potential benefits outweigh the impacts to the environmental, cultural, natural beauty, social, and economic impacts to Lāna‘i and its community.”

While LSG is opposed to the project, we are committed to ensuring that this project is vetted through a fair process and that Lāna‘ians are heard.

LSG's Request



- **Allow on-island opportunities for community to participate in decision-making process**
- **Continually check-in with community groups for input**

Lifting Lānaʻians Voices:

- “Lānaʻi is treated like a step-child. Don't forget about Lānaʻi.”
- “We've been saying the same things for 30 years – we have no control, no land, no control over our future.”
- “We all need to work together (community, government, company) – put our egos aside.”

Appendices



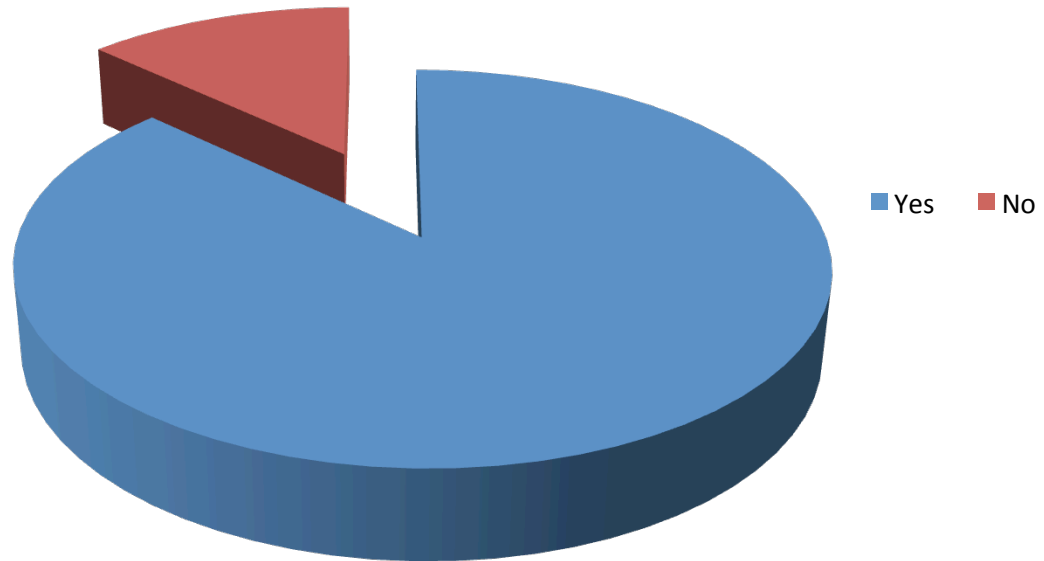
Legislative Presentation

Survey Results



Nearly all survey respondents were aware of the proposed wind farm project

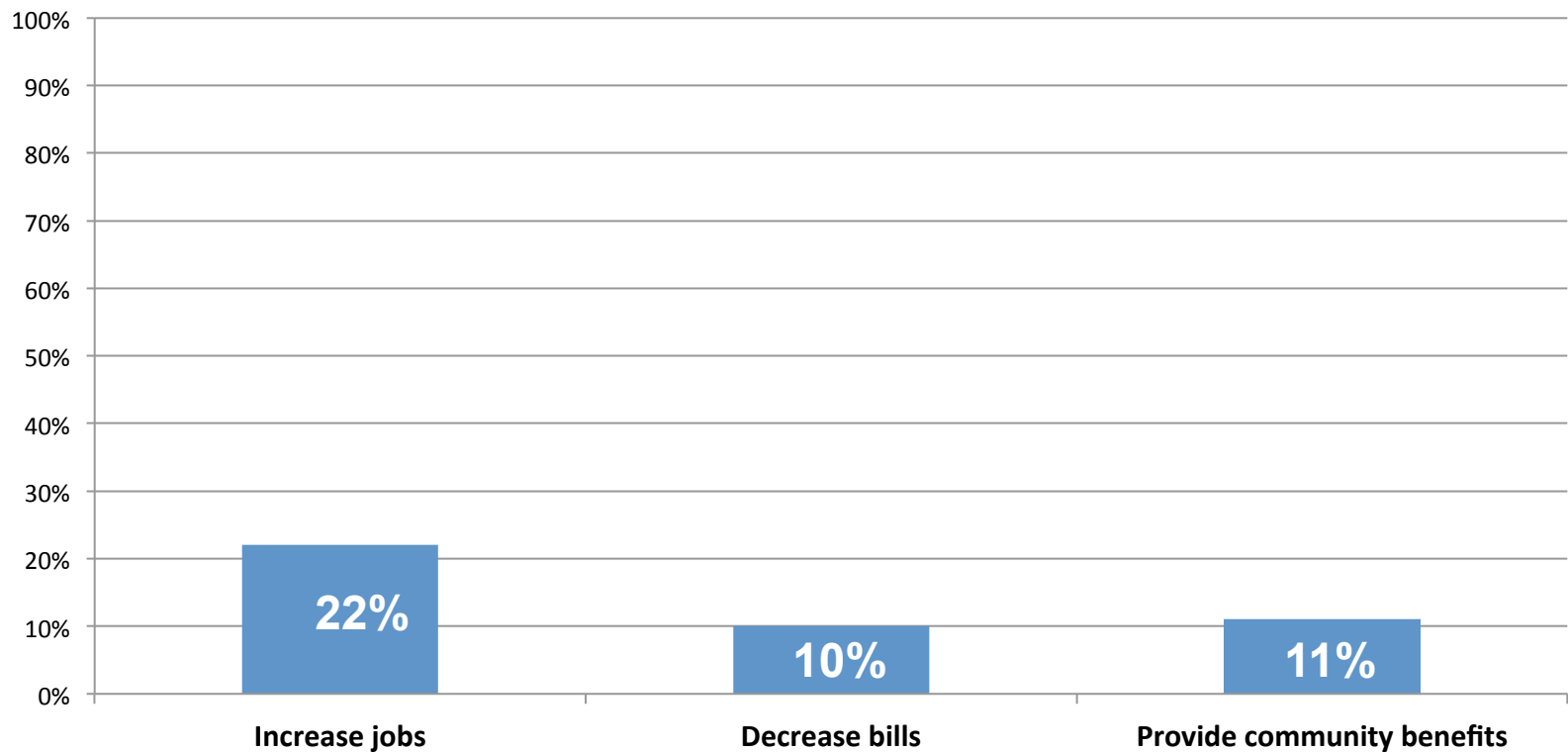
Are you aware of the wind farm project?



Survey Results



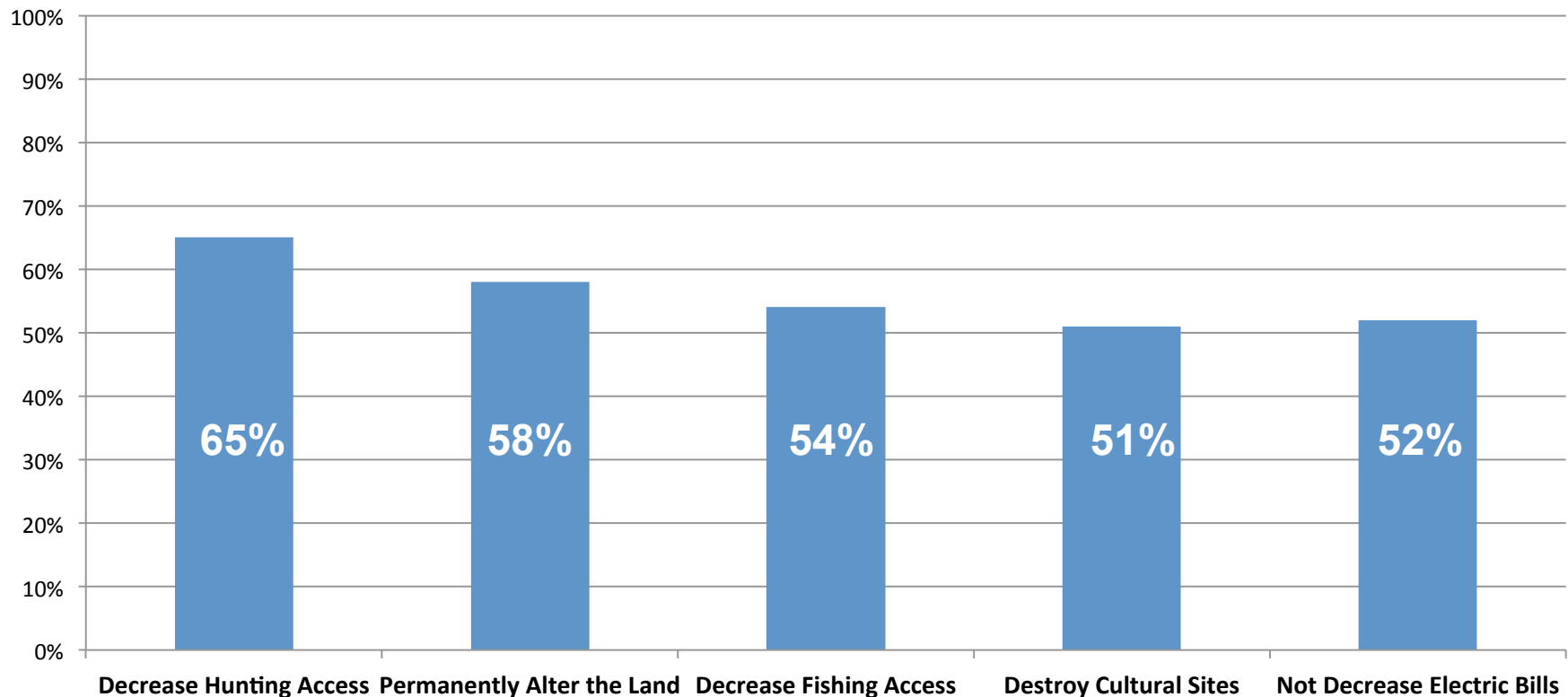
Survey respondents held generally low opinions about what benefits the project will bring



Survey Results



Majority of survey respondents believe negative impacts will be felt



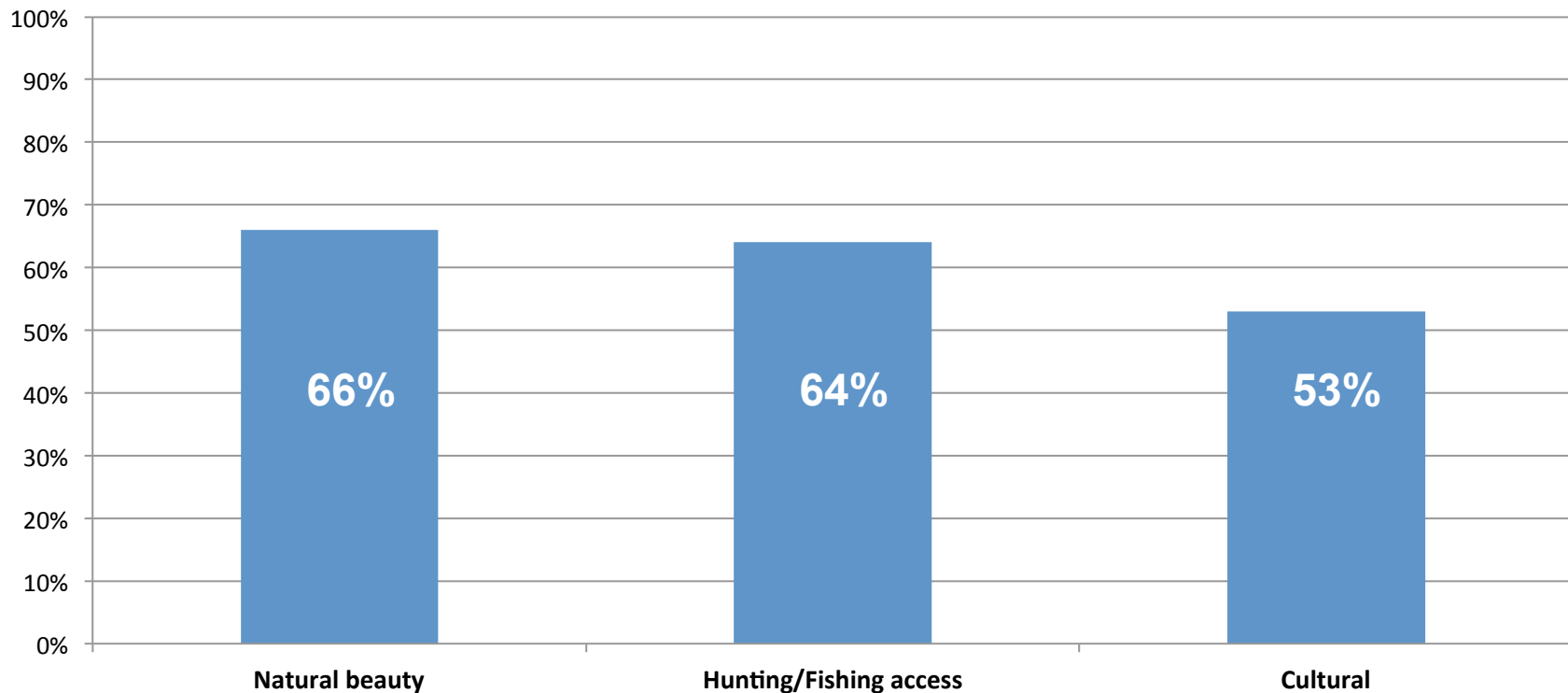
Legislative Presentation

Survey Results



Majority of survey respondents highly value the land for different reasons

What value does the land hold for you?



Support or Oppose?



Of the Lāna'ians surveyed:

- 7% supported the windfarm outright;
- 21% opposed the project;
- 23% supported the project but with reservation; and
- 36% needed more information

*Support or not, respondents clearly saw the potential for the project to divide the community, negatively impacting one of the most important things to Lāna'ians . . . Sense of community and relationships to each other.

More Information



Lānaʻians for Sensible Growth

P.O. Box 630999

Lānaʻi City, HI 96763

<http://lanaicity.ning.com>



Find us on Facebook

O‘ahu Industrial Wind Power Plant on Lāna‘i

Legislative Information Briefing, January 11, 2011

Senate Committee on Energy and Environment
Senate Committee on Commerce and Consumer Protection



www.friendsoflanai.org
friendsoflanai@gmail.com

**Friend's of Lāna'i exists to give voice to the many Lāna'ians
who strongly oppose the Oahu industrial wind power plant on Lāna'i.**

Aloha, Senators, and thank you for providing this informational briefing opportunity.

The purpose of this packet is to offer a Lāna'i perspective on the proposed industrial wind power plant being planned for our island. We will point out the enormous costs to Hawaii's tax and rate payers, as well as the irreversible and destructive environmental, social, and economic impacts to Lāna'i.

We also urge you to seek answers to these questions:

- It is inconceivable that this project could be so far along in planning but not yet have a solid estimate of financial costs and impacts. How will the State fund the \$1 billion for the cable? No doubt from taxpayers, but will it be in the form of a legislative appropriation, or State of Hawaii bonds, or some other funding combination? Regardless, we need to know how these enormous costs will be allocated. While the power purchase agreement (PPA) discussions have just begun, and the PUC has not yet determined the rates, HECO and/or DBEDT must have preliminary estimates of what this project will cost those who must pay for it. Why have we not seen those calculations?
- The process thus far has been anything but transparent. For example, a taxpayer-funded National Renewable Energy Laboratory report, *Hawaii Big Wind/Undersea Cable Economic Analysis* by Bob Springer of the NREL Project Development & Finance Group, studied the financial implications of this industrial wind power plant, particularly on Lāna'i. Those implications, including projected electric rates, will have a significant impact on Lāna'i residents and all of Hawaii's taxpayers, but DBEDT has refused to share it with the public. How can you insure that Hawaii residents see this and ALL reports and related analyses?
- Why, when Federal and State requirements for an Environmental Impact Statement (ESI) require that it include a study of alternatives, does DBEDT's recently-released Environmental Assessment/ Environmental Impact Statement Preliminary Notice for the Hawaii Interisland Renewable Energy Program (EA/EISPN HIREP) clearly indicate that they have no intention of examining any alternatives other than Big Wind?

Again, we thank you for this opportunity to present our perspective.

Friends of Lāna'i

friendsoflanai@gmail.com

www.friendsoflanai.org

O'ahu Industrial Wind Power Plant on Lāna'i

Statewide Impacts

- The State's share alone is projected by DBEDT two years ago to be one BILLION dollars -- just for the cable. That does not include the estimated one BILLION for each wind power plant (Lāna'i and Moloka'i) or the millions already spent on preliminary studies. The State's share -- in a budget that has forced our schools to close on Fridays and has seen state services cut and cut and cut -- will inevitably be borne by Hawaii's taxpayers and rate payers. And the future isn't much brighter, as newly-elected Governor Abercrombie recently announced that the state faces a \$843 million budget shortfall over the next two fiscal years. The Governor promised that the state would find a way out of this budget "sinkhole," saying that "...taxes would not be raised ..." to do so.
- The total costs of this \$3 billion project average out to \$2,300 per Hawai'i resident.
- Assuming an average cost of \$35,000 for installing photovoltaic (PV) panels on the average Hawaii house, the State's share alone would provide PV to over 28,500 of O'ahu's 400,000 homes. And if the entire \$3 billion dollars were applied, it would cover 85,700 homes -- one-fifth of O'ahu's households. That same amount could provide solar hot water for every household on O'ahu.
- The big winner is one individual -- California developer David Murdock. The owner of 98 percent of Lāna'i stands to personally profit (Castle & Cooke is privately held) by developing a power plant with a free source of fuel. While he'll have major upfront costs, once built his operating costs (e.g., less than 20 full-time employees) are minor. And it will be Oahu's ratepayers and Hawaii's taxpayers who help underwrite those profits through higher taxes and increased rates.
- If HECO has to borrow money to finance the capital expenses of transporting the cable's power from the landing sites to the inverter station, building the O'ahu converter station, and upgrading the grid to handle 400 megawatts (MW) of intermittent power, how will they recover those costs?
- Why has no similar pressure been applied to advance other renewable energy alternatives, like wave energy, or ocean thermal energy conversion (OTEC)?

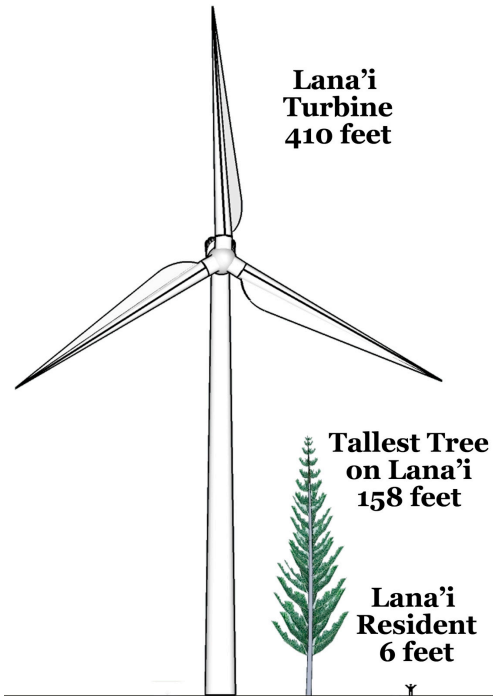
To date, no financial projections have been shared with those who will pay those costs -- Hawaii's taxpayers.

Impact on Lāna'i

- For Lāna'i, there could be between 100 to 200 turbines, consuming -- and irrevocably altering -- up to 22,000 acres, or one-fourth of the island. (See the illustration showing a similar footprint on O'ahu) (*HIREP EIS/EA PN and C&C's EIS/PN*)



HECO's map of comparable (in green) land usage on O'ahu for a similar wind power plant



•The proposed home for this industrial wind power plant is in the heart of Lāna‘i’s premiere hunting and fishing grounds. Thousands of food-producing deer and mouflon are harvested annually by Lana’i residents AND - through a highly-coveted statewide lottery - off-island residents as well. Will this area be open to hunters and fishermen after construction? Would you allow hundreds of high-powered rifles near your power plant?

•Each tower will be over 410 feet high – over 2 ½ times higher than the tallest tree on Lāna‘i (the Norfolk in front of the Lodge at Koele) and as high as the highest building (First Hawaiian Bank Building) on O‘ahu.

•The turbines and propellers, most likely of foreign manufacture, will be shipped into Lāna‘i through Kaunapali Harbor. The EIS/EA HIREP acknowledges that the harbor is insufficient to handle these huge pieces of equipment, requiring alteration of this harbor. Who pays for these changes? What is the impact to Lāna‘i

residents while the harbor is under construction and during the importation of these huge towers and propellers?

- The State road coming up from the harbor will need to be significantly straightened. Who will pay for this construction expense?
- **NONE** of the power generated from the wind turbines will benefit Lāna‘i. All the renewable energy generated by this wind power plant will be shipped via undersea cable to Oahu. (EIS/PN + C&C/PM)
- Short term construction jobs (250+/- for 18 months) -- most of which will require highly-skilled workers with experience working on 250’ tall wind turbine towers -- may utilize some Lāna‘i workers. (EIS/PN)
- Long term jobs (15-20) may utilize some Lāna‘i workers (EIS/PN) many of whom would also require specialized training.
- The project will require two inverter stations, each approximately 1 acre by 9 stories high, or 8 acres by 1 story. One will be built near Lana’i’s Polihua Beach shoreline to convert the wind-created energy to DC current for transmittal via the undersea cable. Polihua Beach is a prime tourist attraction, and a source of food for many Lāna‘i residents. The second one, somewhere on O‘ahu, then converts the power back to AC for integration into HECO’s grid. (EIS/PN)



Polihua Beach, possible site of the 9 acre converter station on Lana'i.

- Each of the turbines will be built on a concrete pad 60 feet in diameter, and will use over 3 million pounds (1,125 cubic yards) of cement, raising the environmental question – where will all that dug-out dirt go? (*EIS/PN*)
- Projected revenue numbers for C&C are enormous, and there is NO guarantee that any of it will stay on Lāna‘i -- or even in the state of Hawaii. For computation’s sake, assume:
 - 400MW (assumes Lāna‘i produces the total requested capacity for the HIREP)
 - 40% net capacity (national standard, given the intermittency of wind power)
 - 19 cents/kilowatt hour (price HECO recently agreed to pay First Wind for Kahuku’s wind power plant)
 - Income to Castle & Cooke = \$266,304,000/year (400 x 24hrs x 40% x 365days x \$190/mwh) (*C&C Senior Management*); with no guarantee that any of this profit stays on Lāna‘i -- or even in the state.
- One preliminary study estimated that annual movement rates for the endangered species U‘au (Hawaiian petrel) through the North End area – slated to house 100+ turbines – numbers in the many thousands. It is also estimated that almost 100% of the U‘au are flying at altitudes low enough to interact with these turbines. There has been no study conducted to date that understands how the U‘au will behave when they fly in and around 250’ tall towers, each with 3 rotating wings of 150’ lengths. (*Draft Habitat Conservation Plan For the Construction and Operation of the Lāna‘i Meteorological Towers, Lāna‘i, Hawai‘i*)

Data References:

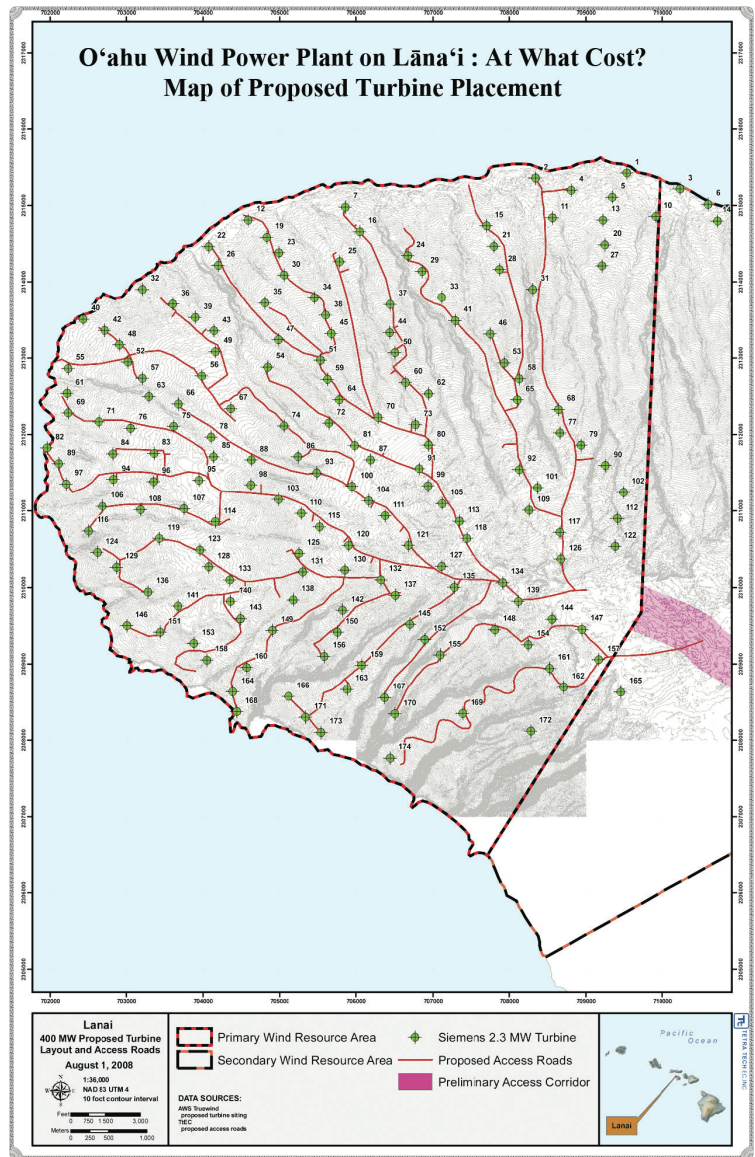
- HCEI/Hawaii Clean Energy Initiative
- EIS/PN - Environmental Impact Statement/Preliminary Notice (Castle & Cooke)
- HIREP EIS/EA PN -- Hawaii Interisland Renewable Energy Project EIS/EA Preliminary Notice
- DBEDT - Hawaii’s Department of Business, Economic Development and Tourism
- C&C/PM -- Castle & Cooke’s Public Meetings



Abandoned wind power plant on the Big Island

The Challenges

- This industrial wind power plant will permanently alter, possibly destroy and certainly disfigure one-quarter of Lana'i.
- These massive turbines would overrun an important cultural and archeological site, rich with Hawaiian history and artifacts.
- It encourages more and more supply for O'ahu electricity users, rather than encouraging conservation and managing demand.
- The social disruptions brought to a safe and rural island population of 2900 by up to 250+ off-island construction workers will be enormous. Lāna'i saw a similar massive social disruption when hotel construction occurred, with a marked increase in domestic violence and drug abuse.
- It sets a precedent of using the Neighbor Islands as an industrial park for O'ahu. Were this project to succeed, what would prevent O'ahu from planting additional wind generators on Lāna'i?
- Lāna'i has a long history as a plantation, single-owner town. Residents are traditionally reticent to speak out, especially since one-third of island homes are rented from Castle & Cooke, still the major employer on island. Recent incidents of harassment and intimidation have, however, heightened even that normal reticence.



Background on the Project

- Hawaii's electricity rates are among the highest in the nation at 21.53 (average for 2009) cents per kilowatt/hour. (National average is 9.83) (HECO)
- Hawaii depends on fossil fuels to meet over 90% of its energy needs. But ELECTRICITY generation accounts for only 30% of the oil usage; the balance is primarily for transportation (HCEI) and the proposed industrial power plant has no impact on that remaining 70%.
- The State's target of 70% of Hawaii's energy from renewable sources by 2030 (HCEI) is a voluntary agreement.
- O'ahu's current electricity consumption is approximately 1400 Megawatts (MW) per day, so the agreement between the State of Hawaii, Hawaiian Electric, First Wind (Moloka'i) and Castle & Cooke (Lāna'i) to produce 400 mw and ship that electricity solely to Oahu via interisland cable is only 10% of O'ahu's needs. (*HIREP EIS/EA PN and DBEDT*)
- First Wind (Moloka'i; developers of 30 MW Kaheawa Wind Power Plant on Maui) and Castle & Cooke (Lāna'i) have signed an agreement negotiated by Hawaiian Electric and the State of Hawaii proposing to share the export of wind-generated power to O'ahu at 200 MW each (*HIREP EIS/EA PN*). If one party fails to perform, the other site will host ALL the turbines.



- The proposed undersea cable may come ashore on O'ahu at two locations -- the Kaneohe Marine Corps Airbase and either Pearl or Honolulu Harbor (C&C/PM). The proposed oceanic cable will be laid directly in the Hawaiian Islands Humpback Whale National Marine Sanctuary (Lāna'i is the only Hawaiian island completely surrounded by the HIHWNMS) (*HIREP EIS/EA PN*)
- It is currently contemplated that the State will own the interisland undersea cable. It will be developed under the direction of DBEDT at an estimated cost of \$1 billion dollars. How much of this will be paid for by Hawaii's taxpayers?

The Dilemmas of Wind Power : Three Articles of Interest

Editorial from the *Wall Street Journal*, 12/20/2010

Ethanol isn't the only heavily subsidized energy source that won a multibillion dollar jackpot in last week's tax deal. The other big winner was the wind industry, which received a one year extension of a \$3 billion grant program for renewable energy projects.

Talk about throwing good money after bad. Despite more than \$30 billion in subsidies for "clean energy" in the 2009 stimulus bill, Big Wind still can't make it in the marketplace. Denise Bode, CEO of the American Wind Energy Association, had warned that without last week's extension of the federal 1603 investment credit, the outlook for the wind industry would be "flatline or down." Some 20,000 wind energy jobs, about one-quarter of the industry's total, could have been lost, the wind lobby concedes. For most industries that would be an admission of failure, but in Washington this kind of forecast is used to justify more subsidies.

But what have these subsidies bought taxpayers? According to AWEA, in the first half of 2010 wind power installations "dropped by 57% and 71% from 2008 and 2009 levels." In the third quarter, the industry says it "added just 395 megawatts (MW) of wind-powered electric generating capacity," making it the lowest quarter since 2007. New wind installations are down 72% from last year to their lowest level since 2006. And this is supposed to be the miracle electricity source of the future?

The coal industry, which Mr. Obama's Environmental Protection Agency and Interior Department have done everything possible to curtail, added almost three times more to the nation's electric power capacity in the first nine months of 2010 (39%) than did wind (14%), according to the U.S. Energy Information Administration.

The grant program that Congress has extended was created in the 2008 stimulus bill. It forces taxpayers to pay 30% of a renewable energy project's costs. Big Wind insisted on these grants because wind energy producers don't make enough net income to take advantage of the generous renewable energy tax credit.

The industry also wants a federal renewable energy standard, which would require utilities to buy power from green energy projects regardless of price. Without that additional subsidy, AWEA concedes that wind power will "stall out." It is lobbying for billions of dollars of subsidies to cover the cost of hooking off-shore wind projects to the electricity transmission grid. And now that the cap-and-tax scheme on coal and oil and gas has failed in Congress, the windmillers want the EPA to use regulation to raise costs on carbon sources of power.

Big Wind also has lobbying operations in state capitals, where it has been pushing state renewable energy standards. More than half the states—mostly in the West and Northeast—have enacted these mandates, which are already inflating home and business electricity bills.

According to an analysis by Chris Horner, an energy expert at the Competitive Enterprise Institute, the stimulus bill's subsidies for renewable energy cost taxpayers about \$475,000 for every job generated. That's at least four times what it costs a nonsubsidized private firm to create a job—a lousy return on investment even for government.

The wind industry claims to employ 85,000 Americans. That's almost certainly an exaggeration, but if it is true it compares with roughly 140,000 miners and others directly employed by the coal industry. Wind accounts for a little more than 1% of electricity generation and coal almost 50%. So it takes at least 25 times more workers to produce a kilowatt of electricity from wind as from coal.

Given this level of inefficiency, it's no wonder that wind and solar energy require at least 20 times more in government subsidies per unit of electricity generated than the average for coal and natural gas, according to a 2007 study by the Energy Information Administration.

The wind industry gave the vast majority of its campaign contributions this election cycle to Speaker Nancy Pelosi's Democrats. If Republicans are serious about shrinking the federal budget and ending corporate welfare, a very good target would be green pork, starting with wind.

From Eric Rosenbloom and the American Wind Energy Organization:

- Wind power plants constitute an increase in energy supply, not a replacement. They do not reduce the costs—environmental, economic, and political—of other means of energy production. If wind towers do not reduce conventional power use, then their manufacture, transport, and construction only increases the use of dirty energy. The presence of “free and green” wind power may have the unwanted effect of giving users license to use more energy.
- A typical large wind facility requires just one maintenance worker. Of the 200 workers involved in construction of the 89-turbine Top of Iowa facility, only 20 were local; seven permanent jobs were created. The average nationwide is 1–2 jobs per 20 MW installed capacity.
- Because of the way the electric grid works, constantly matching supply with demand to avoid dips and surges of power, the variable production of wind turbines is treated as part of the demand side of the equation. A base level of power is provided from large plants, and other plants are kept burning to be able to provide the maximum likely power (peak load) needed as it varies through the day. As demand drops, those plants are diverted from power generation, and as demand rises they are brought back on to resume generating the needed power. These plants burn fuel whether or not they are producing electricity.
- In other words, these peak load plants must continue burning fuel when demand falls or wind production rises, because either trend may reverse at any time. Because they are out of the control of the grid's dispatchers, just like user demand, the wind turbines' only effect is to bring the spinning standby plants in and out of production. But, again, the plants continue to burn their fuel. And the additional fluctuations of wind power add to the cost and inefficiency of that burning.
- A further irony is that because an increase in wind power capacity is seen on the grid as an increase in demand fluctuation, it requires dedication of other grid capacity to cover it. Rather than reduce, then, wind power may actually *increase* the use of other fuels.

- Is this Big Wind Project the only answer? Where is the economic analysis to prove this? How does the State know that wave energy for example, or ocean thermal exchange (OTEC) wouldn't provide a similar amount of electricity but at a much lower cost?

From the *Washington Post* - 1/13/2008

- Unfortunately, solar and wind technologies require huge amounts of land to deliver relatively small amounts of energy, disrupting natural habitats. Even an aging natural gas well producing 60,000 cubic feet per day generates more than 20 times the watts per square meter of a wind turbine. A nuclear power plant cranks out about 56 watts per square meter, eight times as much as is derived from solar photovoltaic installations. The real estate that wind and solar energy demand led the Nature Conservancy to issue a report last year critical of "[energy sprawl](#)," including tens of thousands of miles of high-voltage transmission lines needed to carry electricity from wind and solar installations to distant cities.
- Nor does wind energy substantially reduce CO2 emissions. Since the wind doesn't always blow, utilities must use gas- or coal-fired generators to offset wind's unreliability. The result is minimal -- or no -- carbon dioxide reduction. Denmark, the poster child for wind energy boosters, more than doubled its production of wind energy between 1999 and 2007. Yet data from [Energinet.dk](#), the operator of Denmark's natural gas and electricity grids, show that carbon dioxide emissions from electricity generation in 2007 were at about the same level as they were back in 1990, before the country began its frenzied construction of turbines. Denmark has done a good job of keeping its overall carbon dioxide emissions flat, but that is in large part because of near-zero population growth and exorbitant energy taxes, not wind energy. And through 2017, the Danes foresee no decrease in carbon dioxide emissions from electricity generation.

WINDMILLS ON MOLOKAI

By Hui Ho'opakele Aina

We are here today because the winds of Molokai have been identified as a commodity by profiteers, to sell to the consumers of Oahu. This is not a Molokai initiative, and we can survive without it.

Understanding Molokai and her people will be critical if we are to avoid a train wreck in this wind initiative.

The saga of profiteers and Hawaiians is a problematic historical scenario that is about to rear it's ugly head again. It's the same attitude of offering a few nails to Hawaiians if they would fill their ships with food and provisions and the missionaries need to save the souls of the wicked Hawaiians who were to ignorant to vote and to lazy to own land.

Kamakani is not a mere commodity to be bought and sold at the market place. It is an integral part of the heritage and culture of the Hawaiian people. Kamakani is one of four Aumakua or family gods of my Ohana. The Wind Gourd of La'amaomao by Moses K. Nakuina is a Mo'olelo that gives us the wind names of na ahupua'a on all of the islands. La'amaomao's winds could be called upon and released to do the bidding of Paka'a and his son Ku a Paka'a who lived on Molokai and Hawaii Island. Kamakani was called upon to save lives, sink canoes, and destroy armies. Hina the mother of Molokai has a wind gourd named Wawahonua, which contains three winds of Molokai that she can call upon to do her bidding. There are numerous other mo'olelo, mele, chants, and protocols, which talk about kamakani in Hawaiian oral traditions.

Molokai is the piko of the Hawaiian Islands; it sits in the center of the chain. The majority of the population of Molokai are Hawaiians. The people are fiercely protective of their island and culture. They have fought development and industrialized tourism for the past 35 years to keep their island rural. Today there is room and open space for the many windmills. Molokai has a Clear Vision for it's future which is securely rooted in it's past. The vision includes a strong robust economy based on PRODUCTION; Molokai was famous as "Molokai Aina Momona", the fat productive land. Molokai's north and south shores have been labeled as "national interest" and "national treasures" by the federal government, and have the capacities to fill the food security needs of this state. The vision also includes jobs based on the Restoration and Healing of our Island Child Molokai Nui A Hina. With out healthy natural resources, our culture, which is based on subsistence activity, skills, and protocols of respect and sharing, cannot exist.

"Sharing" has always been essential in the survival of our people on islands in the middle of the vast pacific, and so has "asking permission". The question for us on Molokai is will these windmills kill our island and culture or enhance it, are windmills a blessing or a curse? If the State and the profiteers treat Molokai the same way they have just treated the island of Lanai last week, then there will be no windmills on Molokai. We are willing to share, but no one is going to come and take. We are not stakeholders; we are "equal

partners” that need to be at the bargaining table and not at permit meetings and EIS meetings.

The State Legislature or Administration needs to set up a mechanism that will allow the community of Molokai to come to agreements with the profiteers so the TRUE COSTS of these windmills can be negotiated and agreed upon.



PŪINO KOLU O HINA
(THREE WINDS OF HINA)

Basalt, 2004

Here is Hina, Earth Mother with

Wawahonua, the great wind gourd.

Sealed within are the three storms of Hina.

The Ilinahu

The Uluhewa

The Lulukū

Great are the powers that protect the child Moloka'i

Moloka'i nui a Hina.

Moloka'i Wind Names	Home District of Each Wind
1. Aikupala	Kahanui
2. Akani	Wawaia
3. Alahou	Kalama'ula
4. Alopali	Honouli
5. Ehukai	Halawa
6. Ekahanui	Kamalo
7. Ekepue	Wailau
8. Haleolono	Kaluako'i
9. Haulialia	Pala'au
10. Heakai	Kalaeloa
11. Ho'olua	Halawa-nui
12. Hukipepeiao	Kupeke
13. I'aiki	Ho'olehua
14. Ihuhanu	Kawela
15. Ka'ele	Pala'au
16. Kaikioe	Ho'olehua
17. Kehau	Halawa/Waialua
18. Kili'o'opu	Waikolu
19. Kipukaholo	Kalua'aha
20. Koipali	Halawa
21. Koki	Kalaupapa
22. Kololio	Keopuka
23. Kuapa	Mo'omomi
24. Kuhonua	Makanalua
25. Kumuma'oma'o	Kaluako'i
26. La'iku	Halawa
27. Laukamani	Halawa-iki
28. Launahelēhele	?
29. Lawelawemaile	Ko'olau
30. Leia	Kikipua
31. Li anu	Halawa
32. Makaolehua	Kalua'aha
33. Makakuapo	Nihoa
34. Malualua	Hale O Lono
35. Maunaihele'ia	Kainalu
36. Moa'ula	Kalawao
37. Napu'ulolo	Mapulehu
38. Naulu	Halawa
39. Noekamaile	Kahanui 2
40. Okia	Halawa
41. Pai	Kamiloloa
42. Pakaikai	Waialua
43. Pa'upili	Ilioli 1
44. Pelu	Kalaeokala'au
45. Pohakupukupu	Ka'amola

Moloka'i Wind Names	Home District of Each Wind
46. Pu'umakani	Aha'ino
47. Pu'uohoku	Moakea
48. Pu'upapa'i	Ka'amola
49. Pu'upilo	Pelekunu
50. Ualehu	Halawa
51. Ukiukiu	Kalama'ula
52. Waikoloa (Waiakoloa)	Mapulehu

Good afternoon senator's mahalo for this opportunity to speak about the proposed windmill project on Molokai. My name is Shaquille Rapanot-McGuire. I am 17 years-old. I was born and raised on Molokai and I am now a senior at Ho'omana Hou School.

I am against the windmill project; they shouldn't build it on Molokai because Molokai is one of the most cultural places left in Hawaii. If they build windmills on Molokai it won't be the same anymore, because we won't be able to do the things we love and usually do.

The Molokai to Oahu cable would most likely damage Molokai's famous reefs which feed our families. I cannot support a giant windmill project that does not benefit our community and our island.

Molokaʻi ʻĀina Momona

in the

Age of Global Warming



Karen M. Holt, Executive Director
Molokaʻi Community Service Council
January 11, 2011





PROGRAMS :

Moloka'i Community Service Council

EDUCATION

- Nā Kamali'i Hoaloha **Preschool**
- Ho'omana Hou **High School**

YOUTH & FAMILIES

- Moloka'i **Youth Center**
- Hale Ho'omalua **Domestic Violence Shelter**
- Moloka'i Alternatives to Violence **Anger Management Program**
- Kalima Hana **Clubhouse for Mentally Ill Adults**
- **Youth Employment Programs**

COMMUNITY DEVELOPMENT

- Lanikeha **Commercial Kitchen**
- 'Aina Momona **Growers Market**
- Hale Hana Hou **Home Repair Program**
- Kāpili **Fiscal Sponsorship & Non-Profit Incubation**
 - Friendly Isle **United Fund**
 - Ho'oku'i **Wireless Internet**
 - Nā Lima Hana **Artist Studio**

ENVIRONMENTAL PROTECTION

- Hawaiian **Monk Seal Community Liaison**
- Traditional **Fishing 'Auwana** to Control Invasive Species



Molokaʻi ʻĀina Momona Molokaʻi, Land of Plenty

In Ancient Times:

- Named for abundance of “fat mullet and kukui relish”
- Highly productive ocean fishponds
- Northern valleys terraced in loʻi from floor to summit
- Fields of sweet potatoes covering the southern planes
- Food source for people throughout the islands
- Center for training by most powerful kahuna (experts)

Today:

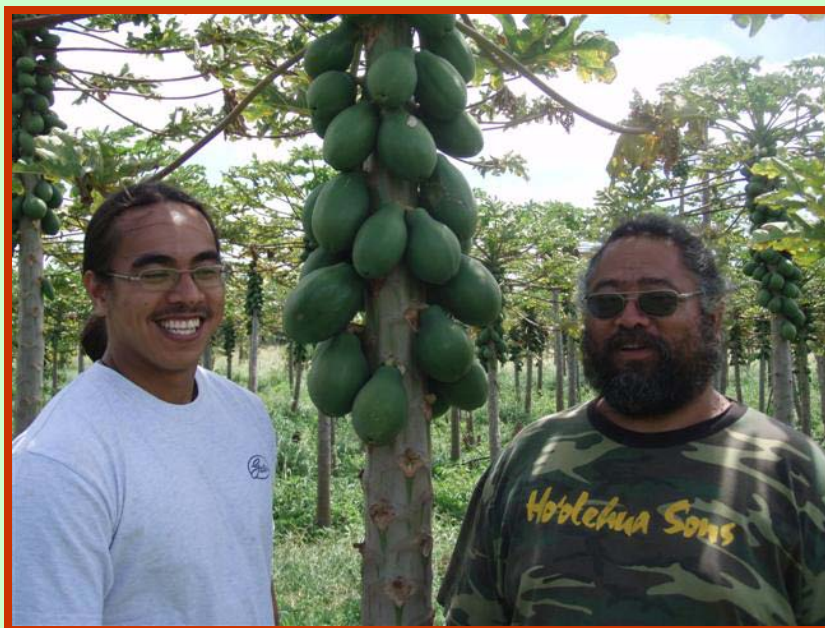
- **South reef** is a “**National Treasure**”
U.S. Geological Survey: <http://pubs.usgs.gov/sir/2007/5101/>
- **North shore** is “**Nationally Significant**”
U.S. National Park Service: <http://www.nps.gov/pwrh/minkstdy/nscliffC.htm>
- **Diversified agriculture** is **expanding**:
 - Molokaʻi sweet potatoes
 - Molokaʻi certified organic papayas



Ancient Fishponds Protected by the
Nation's Longest Fringing Reef




Northern Valleys – Wailau to Pelekunu



Moloka'i Farm Families
with their crops:
Papaya & Sweet Potato





• **Sustainable development**, although not known by this name, was the **economic theory** behind the **traditional Hawaiian subsistence way of life**.

To Hawaiians, this meant **not taking too much today** because if you do, **it won't be there tomorrow**. It meant **sharing with family and friends**, and **taking care of the land** in the same way that **the land takes care of you**.

Moloka'i [has kept its] traditions of **caring for the land and the community** . . . in spite of repeated attempts to impose development projects which gave little thought to the living standard of the next generation.▪

Moloka'i Sustainable Development Report
Hawai'i DBEDT (1995)



The Global **Environmental** Problem: CARBON DIOXIDE FROM BURNING FOSSIL FUELS SPEEDS GLOBAL WARMING

Experts say that **if carbon dioxide levels do not decrease in the next decade, humans may not be able to prevent ecosystem collapse and mass extinctions.**

James Hansen, NASA Climate Scientist

http://pubs.giss.nasa.gov/docs/2006/2006_Hansen_etal_1.pdf

The Global **Economic** Problem: FOSSIL FUELS ARE RUNNING OUT

Experts say that sometime before 2020 (within the next 9 years) there **won't be enough oil and gas** to meet global demands.

Charles Maxwell, Senior Oil Analyst, Weeden & Co.

<http://www.forbes.com/2010/09/13/suncor-energy-oil-intelligent-investing-cenovus.html>

Consequences of Global Warming

- Extreme weather
- Drought
- Disappearing icecaps
- Submerged coastlines
- Loss of currently viable farmland
- Mass extinctions





Consequences for Pacific Islands

Climate change is not an abstract concept in our island communities. It has arrived. **Long term temperature is rising**; at higher elevations the **rate is much higher than the global average rate**.

These higher elevation areas support the best remaining native ecosystems in the Pacific Islands.

Precipitation is decreasing; these decreases are expected to greatly affect drier leeward areas that support the greatest amount of native biodiversity.

Sea surface temperatures are steadily rising and have caused episodes of coral bleaching.

The Pacific Islands Climate Change Cooperative – 12/09

<http://www.fws.gov/science/shc/pdf/PacificIslands.pdf>

Consequences for Hawai'i

- Waikiki under 3 feet of water
- Declining rainfall – loss of watersheds
- Coral reefs dying
- Ocean food resources disappearing
- Extinction of native species



Monk Seals Are **Starving** in the Northwest Hawaiian Islands



Severe Drought in Hawai'i

2006 – 2011

U.S. Drought Monitor

Hawaii

January 4, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	46.22	53.78	36.40	16.45	2.43	0.00
Last Week (12/28/2010 map)	46.22	53.78	36.40	20.50	2.43	0.00
3 Months Ago (10/05/2010 map)	4.45	95.55	72.11	43.10	28.16	5.11
Start of Calendar Year (12/28/2010 map)	---	---	---	---	---	---
Start of Water Year (09/28/2010 map)	2.19	97.81	73.89	46.79	31.55	5.11
One Year Ago (12/29/2009 map)	31.12	68.88	53.44	28.81	5.10	0.00

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, January 6, 2011
National Drought Mitigation Center

Consequences for Moloka'i



A vertical photograph on the left side of the slide shows a cluster of green leaves and a bunch of small, white, star-shaped flowers. The leaves are large and have prominent veins. The flowers are small and numerous, clustered together.

MOLOKA'I's **MAN-MADE** ENVIRONMENTAL PROBLEMS 2011

- ! **Increased salinity** in 3 of 5 drinking water wells
- ! Forest **watersheds devastated** by goats & pigs
- ! **Reefs smothered** by silt
- ! Tons of **rich topsoil eroding** into the ocean:
 - Overgrazing by domestic and feral animals
 - Industrial Ag **tills earth bare** around crops
- ! Five **major streams diverted** to arid West End
- ! **Invasive species** killing native species

Bare Earth and Dust Clouds

Monsanto Corn Field at Kaunakakai

November 2010



Storm Runoff

Turns the **Ocean Red** off of Kaluako'i

January 2011



Erosion Gulches Carve Thousands of Acres



Kaunakakai Stream Gulch

Mauka: **Barren Lands**

Makai: **Dead Reef**



Dead **Native Wiliwili Trees** Killed by **Invasive Wasps** from Taiwan



Erythrina Gall Wasp





Molokai Ranch (MPL)


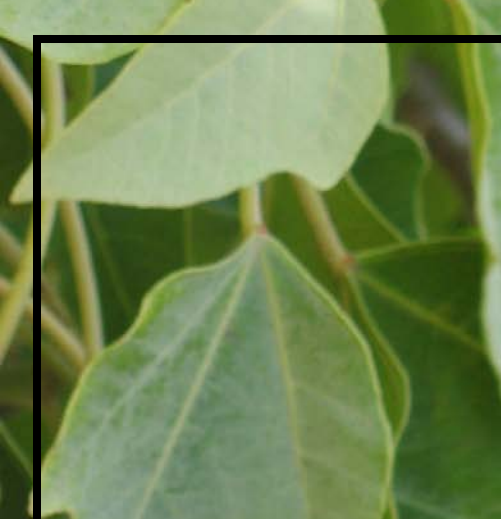
A Subsidiary of Guoco Group Ltd.

In 2008:

- Terminated 120 employees
- Closed Molokai Lodge
- Stopped Kaluakoi Hotel maintenance
- Cut down mature coconut trees
- Abandoned “tentalow” campgrounds
- Threatened to shut down all water & sewer services

In 2011:

- Highest water rates in the nation
- Kaluakoi roads & infrastructure badly deteriorating
- No soil conservation measures implemented
- Water lines still leaking
- Water supply system still illegal
- Mothballed Lodge & Hotel are becoming fire hazards
- Access barred to cultural sites, subsistence fishing



Molokai Ranch – 2008
Golf Course Trees Down
Kaupoa Beach Village Abandoned
Paniolo Camp Abandoned



Moloka'i Just Said

“No”

- 1970's: “Bedroom” suburb for **30,000** on the West End and **900 condos** on the East End
- 1980's: Luxury hotel and condo developments at **Kaiaka** and **Kawakiu**
- 1990's: 24” water pipeline and new well drilling to **develop the arid West End**
- 2000's: **Cruise ship** landings and gentlemen's estates at **Lā'au Point**



January 1999: Moloka'i's Strategic Recovery Plan Wins Federal "Enterprise Community" Designation



The Iao School principal is placed on administrative leave. A-5



A judge is criticized for her sentencing decision. A-5

JANUARY 13, 1999

WEDNESDAY AFTERNOON

PAGE A-3

Molokai picked for 10-year U.S. boost

Honolulu's bid fails, but 'enterprise' status will help revive one island's economy and pride

BY PETE PICHASKE
Phillips News Service

WASHINGTON — Molokai has been picked as a rural "enterprise community" by the Clinton administration, a designation local leaders hope will give their little island a big boost.

However, the administration rejected requests from Honolulu, Kauai, and Kau on the Big Island for special economic development status.

And Molokai failed in its bid to become an "empowerment zone," which brings more benefits than the enterprise community designation.

The announcement came here in Washington, as Vice President Al Gore named the 20 empowerment zones and 20 rural enterprise communities, picked from about 160 applications that will be the latest in a program the administration regards as key to revitalizing ailing communities.

But the reverberations were felt across the Pacific. Honolulu officials, who had traveled to Washington to hand-deliver their application months ago in a delegation led by Mayor Jeremy Harris, said some good will still came

from the process.

"We're disappointed, of course, but we still feel we have the opportunity to move our community forward," said Harris spokeswoman Carol Costa.

She said Harris had set aside \$38 million for community development projects that were prompted by the application process.

On Molokai, meanwhile, elated leaders are hoping their designation will boost both economic vitality and civic pride on one of the poorest of the Hawaiian Islands.

"It's wonderful. It's a great economic development program for the community and it could lead to some wonderful things," said Robbie Guard, economic development coordinator for Maui Coun-

ty, which governs Molokai.


As an enterprise community, Molokai will receive \$250,000 in grants a year for 10 years (empowerment zones receive up to \$2 million a year), get tax credits for employment programs, and be eligible for tax-exempt bonds. These benefits, say Molokai leaders, will help new and existing businesses create jobs (the island's unemployment rate is 17 percent) and reduce poverty.

Leaders say implementing the plan should give the Molokai community a needed dose of self-reliance.

"We have not been a community with much of a voice in its own destiny. We worked hard to determine what the Molokai communi-

ty wants for itself, and having this plan honored like this will really open some doors," said Karen Holt, executive director of the Molokai Community Services Council, which applied for the designation.

"It's not as much money as an empowerment zone, but this means a lot to this community," added Alton Arakaki, one of the community facilitators for the application. "It will provide an image of what Molokai wants for itself." Molokai's 10-year "strategic plan," as outlined in its application, includes projects in environmental recovery and protection, economic recovery, self-governance and health and human services.



Top Priority “EC” Project:

- **Bring ownership of lands held by off-shore owners, including the Ranch, back to the community.**

- This project was viewed as a means by which the Moloka'i community might truly become “empowered,” because ownership of the island’s resources is the community’s surest guarantee that its own plans will be honored and implemented.

- [It is a] community-based attempt to take the initiative in resolving an issue that affects other rural communities throughout the country: absentee landowners whose interests do not always coincide with the desires of those who live in the communities where their land is located.

2006:

First (UPC) Wind

Approaches

Moloka'i





First Wind

Community Outreach

2006 – 2010

- **Community Meetings**
- **Group Meetings**
- **Meetings with Community Leaders**
- **School Presentations**
- **Presentations to DHHL**
- **Public Presentations in All 4 Moloka'i Geographical Districts**
- **Briefings for Policy-Makers**
- **Tours of Kaheawa Wind Farm**



Invitation to **All-District Meetings** in April 2008



E KOMO MAI COMMUNITY FORUM

MOLOKAI SOLUTIONS & UPC

Aloha Molokai, let's talk **WIN-WIN SOLUTIONS** for a healthy economy and to preserve the things we love most about our island. Share your mana`o on acceptable solutions and review **UPC's** proposal to establish a wind farm on our island. Come to any of the community district meetings held in Kaunakakai, Maunaloa, Mana`e, and Ho`olehua.

ALL ARE WELCOME

Meeting Locations

- Kaunakakai Elementary School Cafeteria - Tuesday, April 8
- Maunaloa Elementary School Cafeteria - Wednesday, April 9
- Kilohana Community Center - Tuesday, April 15
- Lanikeha Facility, Hoolehua - Wednesday, April 16

All Meeting times from 6:00 PM to 8:30 PM



Community Benefits

- Helping the community to **purchase Molokai Ranch** lands
- Paying a **market-rate annual rent** to lease back lands needed for the wind farm (initial estimate: \$3-\$5 million/yr)
- Hiring **local residents** to work on the project
- Working with the community to **lower Moloka'i electric rates**
- Protecting **environmental and cultural resources**; relocating windmills away from sensitive sites
- Allowing access to lands beneath windmills for **hunting, gathering, shoreline access**, and any other activities that will not interfere with operations (including **farming and eco-tourism**)
- Supporting **environmental reclamation** programs, like the native plant and nene goose projects at the Kaheawa wind farm on Maui
- Turning over **ownership of the windmills** to the community after First Wind receives sufficient returns on its investment



The Molokai Dispatch

Tuesday, July 31, 2007

Weekly Newspaper's Online Poll

Poll Question: “Windmills are an environmentally responsible alternative to large scale development and should be considered for Molokai.”

Results: 484 people voted in the online poll.
71% said “Yes,” windmills are an environmentally responsible alternative to large scale development.

The Community Votes to Support Windmills

April 2, 2008

Group votes "Yes" on
LPC Wind Project



The Community Votes to Condemn Molokai Ranch

August 20, 2008



2009 Legislature Takes Action

THE SENATE
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

JAN 28 2009

S.B. NO. 1201

A BILL FOR

RELATING TO LAND ACQUISITION.

BE IT ENACTED BY THE LEGISLATURE

1 SECTION 1. The Legislature
2 Molokai Properties Limited, a wh
3 Singapore-based GuocoLeisure Lim
4 operations of its various holdin
5 of Molokai, including the Moloka
6 Kaluakoi Golf Course, Maunaloa T
7 station, and its cattle operatio
8 hundred twenty jobs on the islan
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10 indicated that it was also denyi
11 landholdings, that comprise appr
12 entire island of Molokai, to the
13 purposes of gathering, hunting, a
14 the type of subsistence lifestyle
15 have, by necessity, come to rely
16 The legislature further not
17 Limited landholding contain numer
18 historical and cultural value, in

SB LRB 09-0475.doc



HOUSE OF REPRESENTATIVES
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

A BILL FOR

RELATING TO LAND ACQUISITION.

BE IT ENACTED BY THE LEGISLATURE OF T

1 SECTION 1. The Legislature nor
2 Molokai Properties Limited, a wholly
3 Singapore-based GuocoLeisure Limited
4 operations of its various holdings a
5 of Molokai, including the Molokai Lo
6 Kaluakoi Golf Course, Maunaloa Town
7 station, and its cattle operations,
8 hundred twenty jobs on the island th
9 unemployment rate in the State. Fur
10 indicated that it was also denying a
11 landholdings, that comprise approxi
12 entire island of Molokai, to the pub
13 purposes of gathering, hunting, and
14 the type of subsistence lifestyle th
15 have, by necessity, come to rely on
16 The Legislature further notes t
17 Limited landholding contain numerou
18 historical and cultural value, inclu

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H.B. NO. 1295

HOUSE OF REPRESENTATIVES
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

H.C.R. NO. 95

HOUSE CONCURRENT RESOLUTION

REQUESTING THE DEPARTMENT OF LAND AND NATURAL RESOURCES TO
CONDUCT AN INDEPENDENT APPRAISAL OF MOLOKAI PROPERTIES
LIMITED LANDHOLDINGS ON THE ISLAND OF MOLOKAI.

1 WHEREAS, Molokai Properties Limited (MPL) is owned by a
2 foreign company, GuocoLeisure Limited, based in Singapore; and
3
4 WHEREAS, in April 2008, MPL shut down all of its business
5 operations on Molokai; and
6
7 WHEREAS, under orders by the Department of Health, MEL was
8 required to continue to provide water and sewer services; and
9
10 WHEREAS, MEL has not made any commitment to continue to
11 provide water and sewer services and the County of Maui has been
12 forced to commence litigation against MEL to enforce contracts
13 to operate and maintain water and wastewater systems for the
14 protection of the health and safety of its citizens; and
15
16 WHEREAS, MEL owns over 60,000 acres of land, approximately
17 one-third of the land on the island of Molokai; and
18
19 WHEREAS, MEL has engaged in land use practices that have
20 substantially contributed to the loss of rainforests on its
21 properties and to the increase of erosion, which depletes the
22 quality of soil on the land and harms the marine ecosystems
23 along Molokai's coastline; and
24
25 WHEREAS, MEL is now denying access to most of its
26 landholdings to Molokai residents who relied on those lands for
27 gathering, hunting, and fishing; and
28

HCR HRS 2309-2451

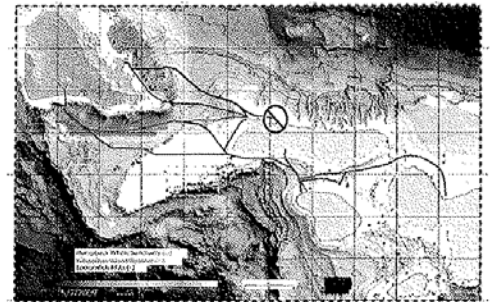


Disinformation

Mo'omomi/Anahaki



Possible Interisland Cable Routes



Scare Tactics

Impact of Infrastructure

- Road development
 - Areas divided (ecosystem fragmentation)
- Excavation/Heavy Equipment
 - Cultural sites
 - Burial sites/Iwi
- Noise during construction
- Disturbance to wildlife

Impact of Towers and Transmission Cable

- Visual blight/pollution/scarred viewshed for homesteaders
- Disturbing sounds
- Air traffic safety hazard
- Dredging/Digging/Drilling/Excavation and land resources

Wildlife/Plant Impacts

- Lights affect birds
- Rotating Blades Kill Birds Attract Wild Animals
- Noise/subterranean vibrations
 - Domestic livestock
 - Ground nesting wildlife
- Habitat loss

Lifestyle and Cultural Impacts

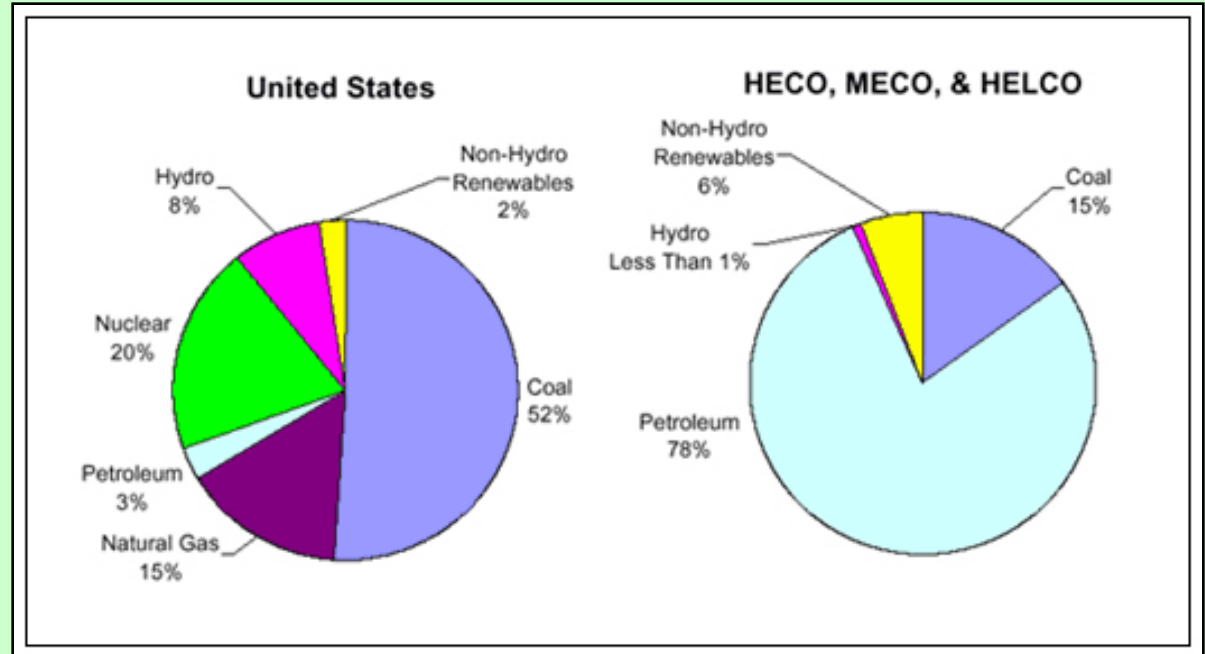
- Industrializes a rural landscape
 - Highest man-made structures on Molokai
 - Mechanized, noisy tower in a natural sanctuary

Spiritually intrusive

Cultural Disconnect

- Limits subsistence access
- Prevents people from land
- Fragmentation

Hawai'i is the **Most Oil-Dependent** State



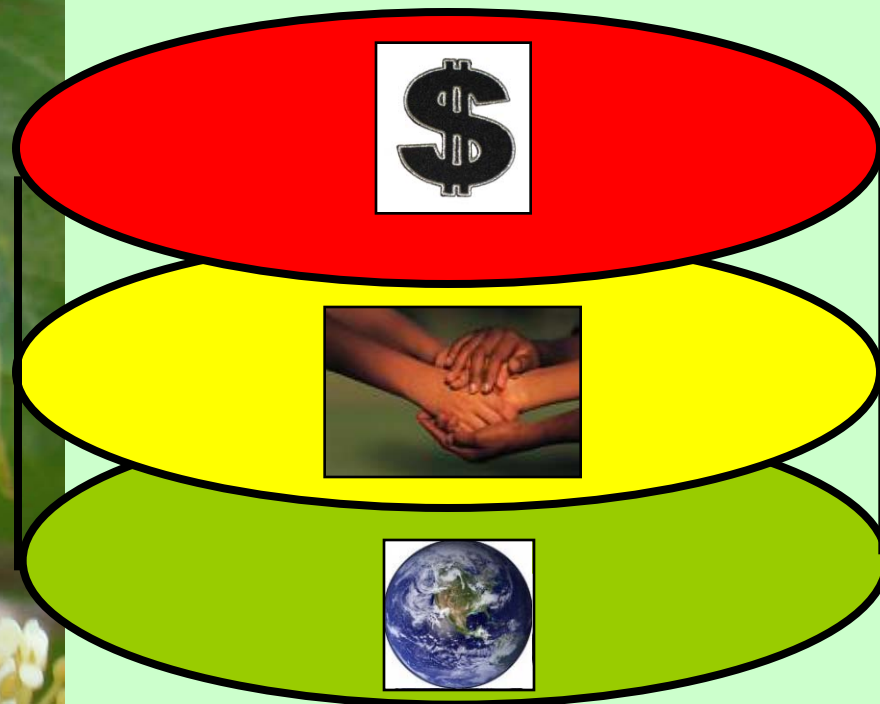
**One Windmill Can Replace
15,000 Pounds
of Carbon Dioxide Emissions
EVERY DAY**

(Running at 2.5 megawatts for 5 hours/day)



The Cake Chart

A true picture of the real economy



Cash

Non-Cash

(Donate, Volunteer, Barter)

Nature



Ho'i I Ka Pono
O Moloka'i



Molokai
Future of a Hawaiian Island



"I KA WĀ MA MUA, KA WĀ MA HOPE."
THE FUTURE IS FOUND IN THE PAST.



Department of Energy

Interisland Wind

January 11, 2011

Steve Lindenberg

Hawaii Clean Energy Initiative

- State energy sector dependent on petroleum
- Excessive cost at normal prices stunt economy
- Recent volatility was prediction for future
- Hawaii has a brittle vulnerable economy
- Now is the time to reduce future risk
- 70% Clean Energy by 2030
- All options must be considered and used

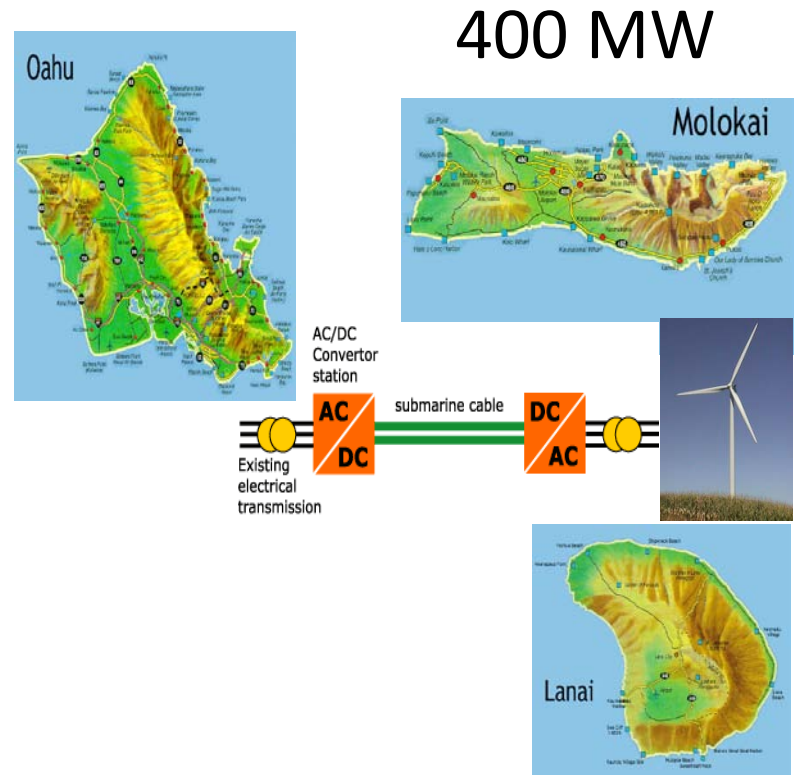
Renewable Portfolio Standard

269-92 Renewable portfolio standards. (a) Each electric utility company that sells electricity for consumption in the State shall establish a renewable portfolio standard of:

- (1) Ten per cent of its net electricity sales by December 31, 2010;
- (2) Fifteen per cent of its net electricity sales by December 31, 2015;
- (3) Twenty-five per cent of its net electricity sales by December 31, 2020; and
- (4) Forty per cent of its net electricity sales by December 31, 2030.

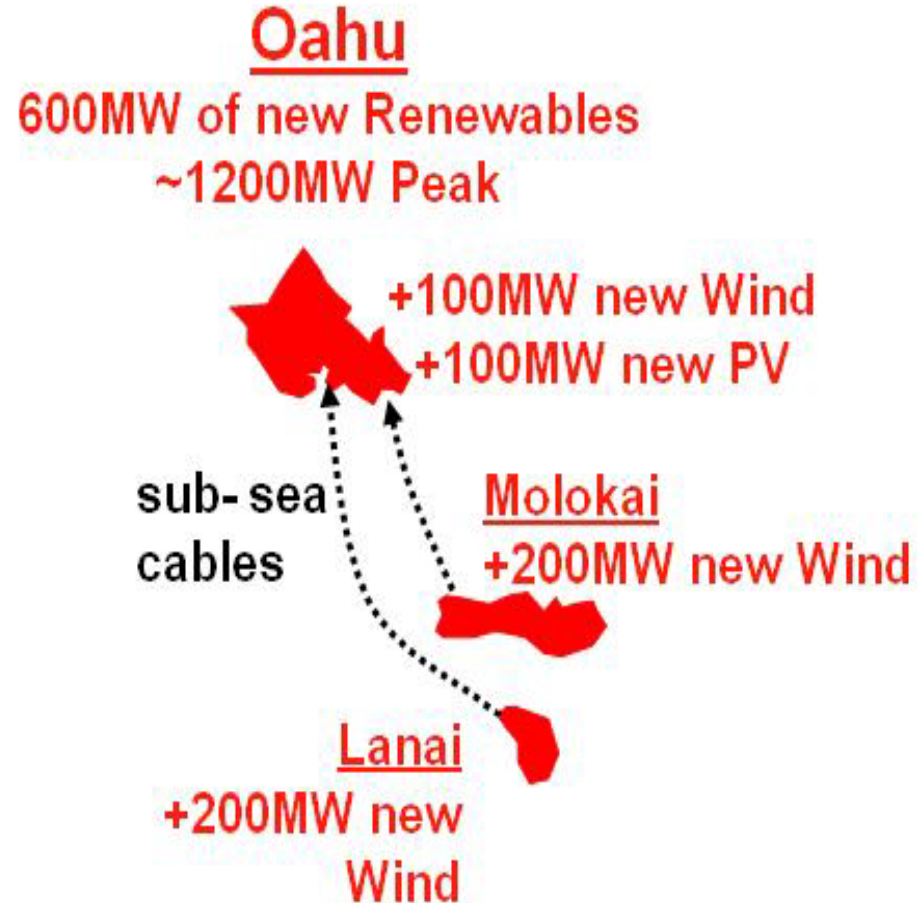
Interisland Wind Structure

- This project consists of three main components:
 - Wind Farms on Molokai and Lanai
 - An HVDC cable system connecting the wind farms to Oahu
 - Grid upgrades on Oahu

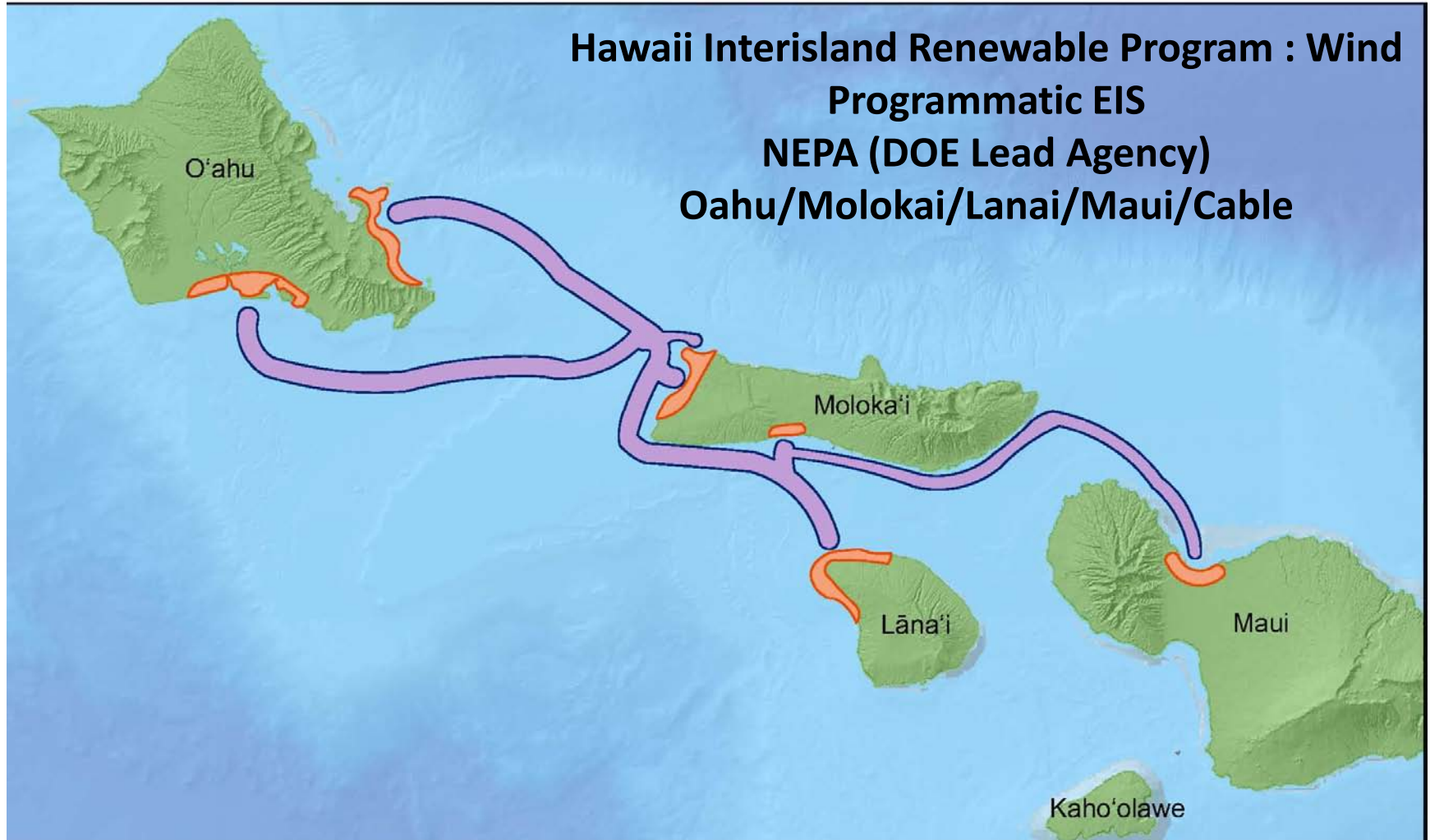


Technical Review Committee

- HECO, DBEDT, NREL
- Determined that integrating 600MW of intermittent renewables into Oahu was feasible with existing generators.
- Looked at eight scenarios of cable configuration between Oahu, Molokai, Lanai, and Maui
- Cost estimate of up to \$1Billion for the cable and converter stations



HIREP EISPN Scope



Environmental Review

- Programmatic EIS underway
- Comment period for scoping the Programmatic EIS ends in March 2011
- Scoping Meetings
 - Oahu Feb 1, Mckinley HS
 - Maui Feb 2, Pomaikai Elementary
 - Molokai Feb 3, Mitchell Pau`ole Community Center
 - Lanai, Feb 5, Lanai HS

Summary

- Total Cost for Interisland wind: 21 cents/kwh
 - 13 cents/kwh Lanai Wind
 - 8 cents/kwh Cable
- Total cost of power is cheaper than feed in tariff
- Estimated cost for Cable
 - up to \$1B
- Cable ownership still a question
 - Privately owned
 - HECO
 - State
 - Public Private Partnership
- EISPN is underway
 - Programmatic due April 2012