INNOVATIONS
DEVELOPMENT GROUP

Native-to-Native
Geothermal Firm Power
Sustainable Energy
Community Collaboration

THANK YOU & ACKNOWLEDGEMENTS

- Committee on Energy & Environment:
  - Sen. Mike Gabbard, Chair
  - Sen. J. Kalani English, Vice-Chair
- Committee on Energy & Environment Protection
  - Rep. Denny Coffman, Chair
  - Rep. Derek S.K. Kawakami, Vice-Chair
- Committee on Water, Land, and Housing
  - Sen. Donovan M. Dela Cruz, Chair
  - Sen. Malama Solomon, Vice-Chair
- Committee on Water, Land, and Ocean Resources
  - Rep. Jerry L. Chang, Chair
  - Rep. Sharon E. Har, Vice-Chair
- Committee on Hawaiian Affairs
  - Sen. Brickwood Galuteria, Chair
  - Sen. Pohai Ryan, Vice-Chair
- Committee on Hawaiian Affairs
  - Rep. Faye P. Hanohano, Chair
  - Rep. Chris Lee, Vice-Chair

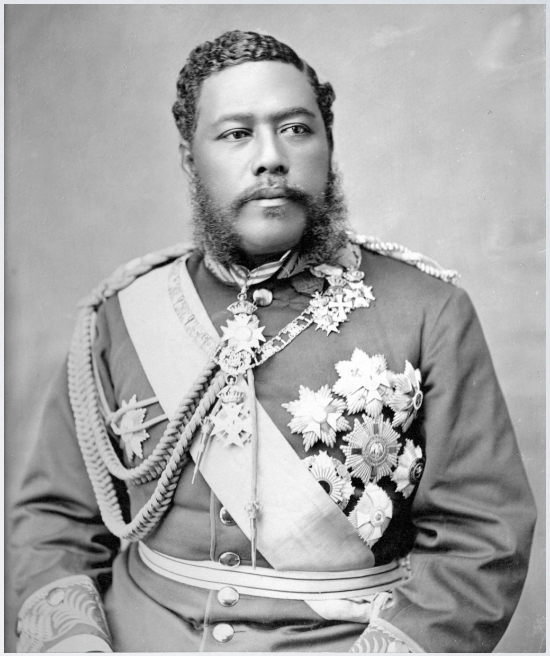
PURPOSE OF LEGISLATIVE BRIEFING

- Inform Policy Makers about new approaches to renewable energy development in the Pacific that can benefit our State
- Introduce IDG and Native to Native - Community Collaboration Model for Energy Development
- Propose a new State Policy & Approach for Energy Development through collaborations with the State and Private sector
- Hawaiian Electric, Co. Planned Firm Power (Geothermal) RFPs for:
  - *Maui (MECO) - 50 MW RFP*
  - *Hawaii Island (HELCO) - 50 MW RFI*

GEOTHERMAL ENERGY AND THE KINGDOM OF HAWAII

- The Hawaiian Monarchy wanted to develop Geothermal Electricity and send it to Oahu by undersea/ground cable

- 1881 King Kalakaua met with American inventor Thomas Edison in New York City to discuss geothermal as a potential energy source for the electricity needs of the entire island chain



INTRODUCTION

- IDG Established in 1998
- Hawaii Based Company
- Majority Native Hawaiian Owned
- IDG has the Profile and Experience in developing energy opportunities in Hawaii and the Pacific

INNOVATIONS
DEVELOPMENT GROUP

IDG INTERNATIONAL DEVELOPMENT TEAM

IDG works with technical and financial partners including community counterparts to bridge cultures and produce projects that yield tremendous value to all stakeholders in a manner that preserves cultural traditions and respects sites of significant cultural interest.

Patricia Brandt
CEO

Lee Erwin, CPA
Financial Advisor

Cy Bridges
Cultural Advisor

Mililani Trask, Esq.
Intl Indigenous Expert / Community Advisor

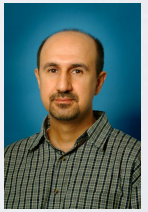
Keli'i Erwin, CPA
Investment Advisor - Renewable Energy Focus

Robbie Cabral
Senior Advisor

Oswald Stender
Master Development Consultant

Patricia Medina Talbert, Esq.
Corporate Counselor Advisor

Loretta Lovell, Esq.
New Zealand Commercial Attorney



Dr. Sadiq Zarrouk
Geothermal Science Advisor

IDG SCIENCE & TECHNOLOGY TEAM

- GNS Science - *(www.gns.cri.nz)*
  - *Geothermal Geologist/Petrologist*
  - *Geochemist x2*
  - *Volcano Geophysicist X2*
- SKM - Sinclair Knight Merz *(www.skmconsulting.com)*
  - *Engineering Geologist / Hydrogeologist*
  - *Senior Drilling Engineer x3*
  - *Senior Geophysicist*
  - *Senior Geoscientist*
  - *Senior Geologist x2*
  - *Reservoir Engineer*
  - *Gis/Spatial Techinician*

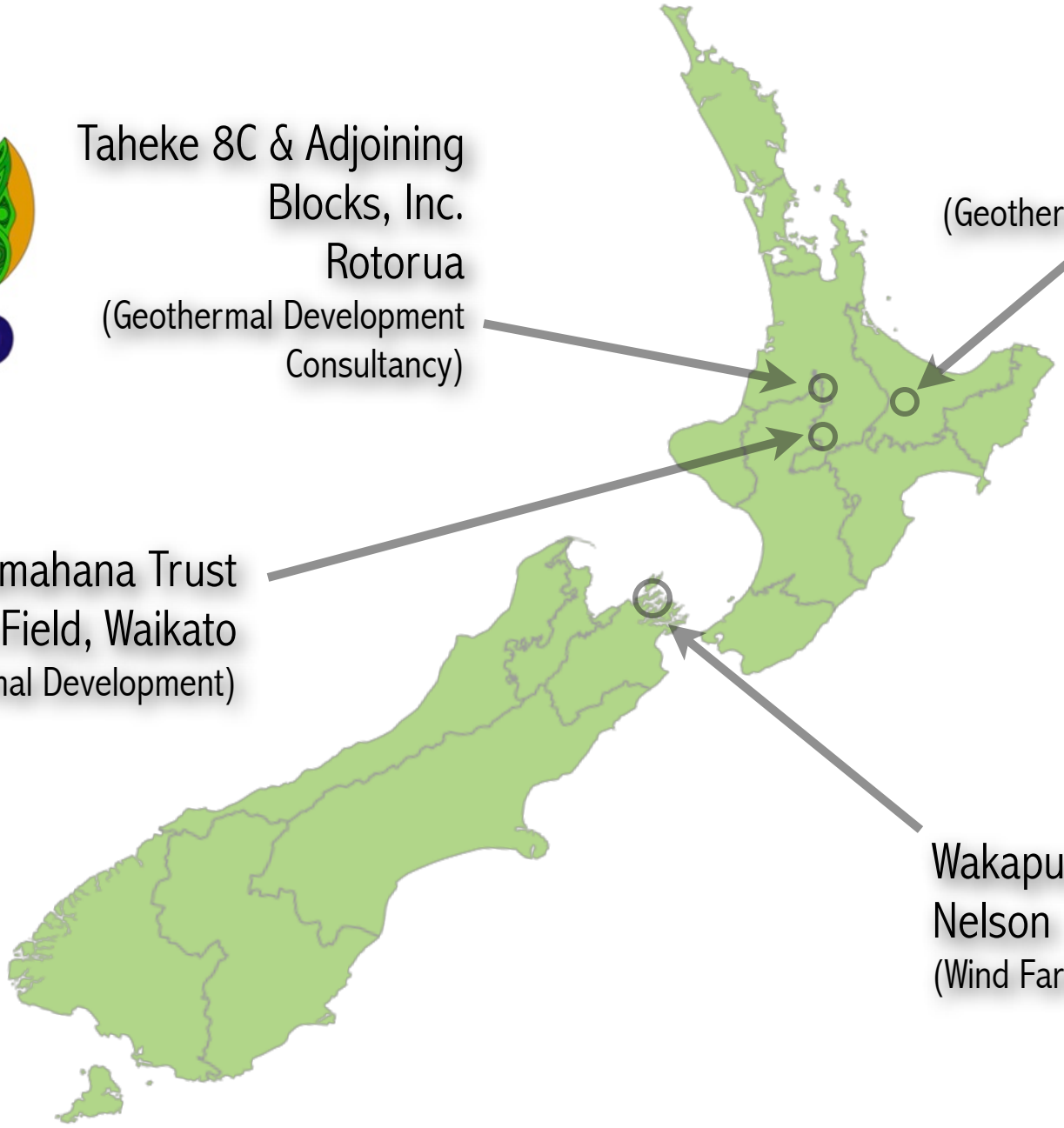
Current Projects in New Zealand

Taheke 8C & Adjoining Blocks, Inc.
Rotorua
(Geothermal Development Consultancy)

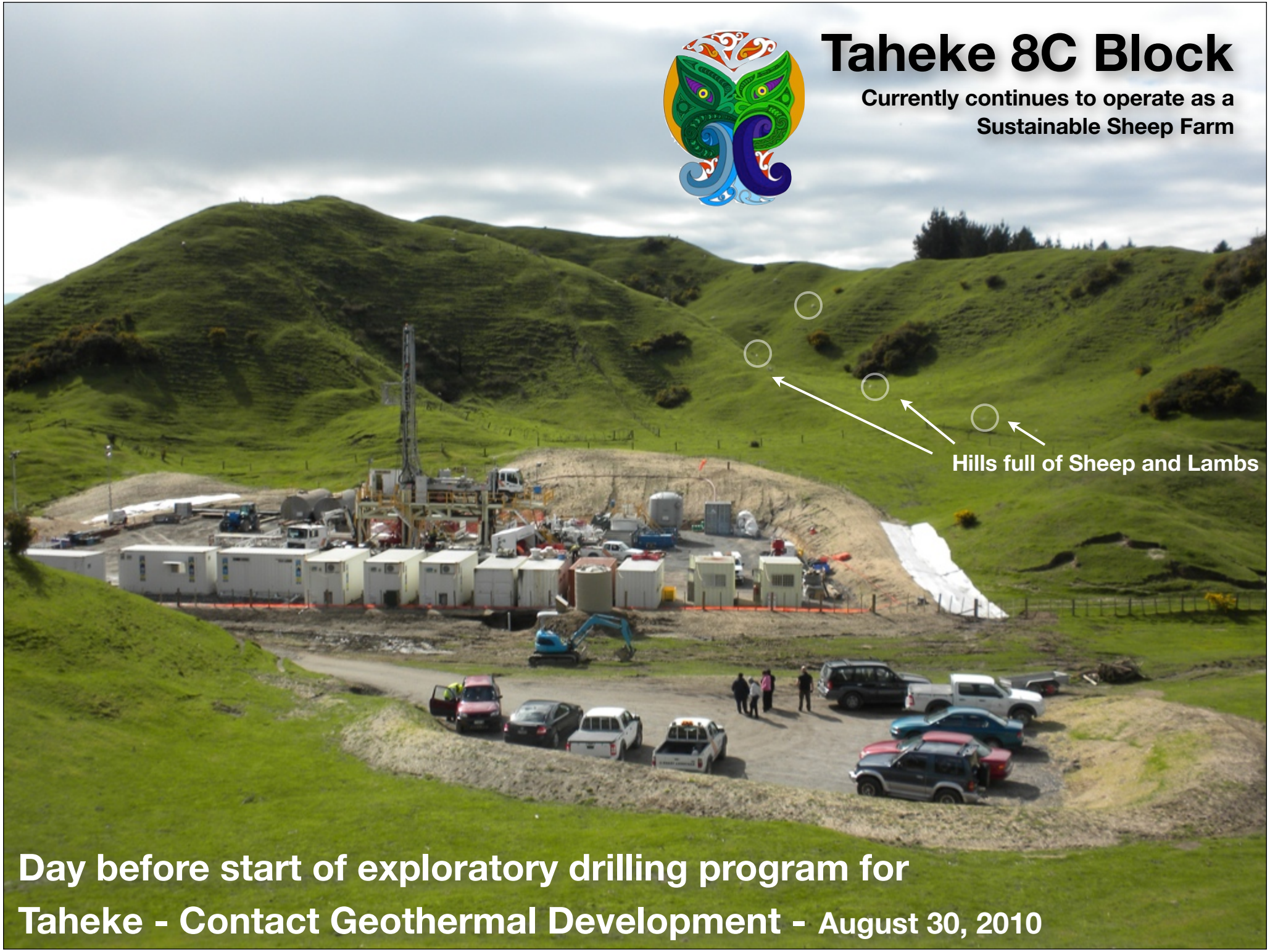
A8D Ahu Whenua Trust
Kawerau
(Geothermal Development - Developer of Record)

Te Ahi O Maui
GEOTHERMAL PROJECT

Waipupumahana Trust
Horohoro Field, Waikato
(Geothermal Development)



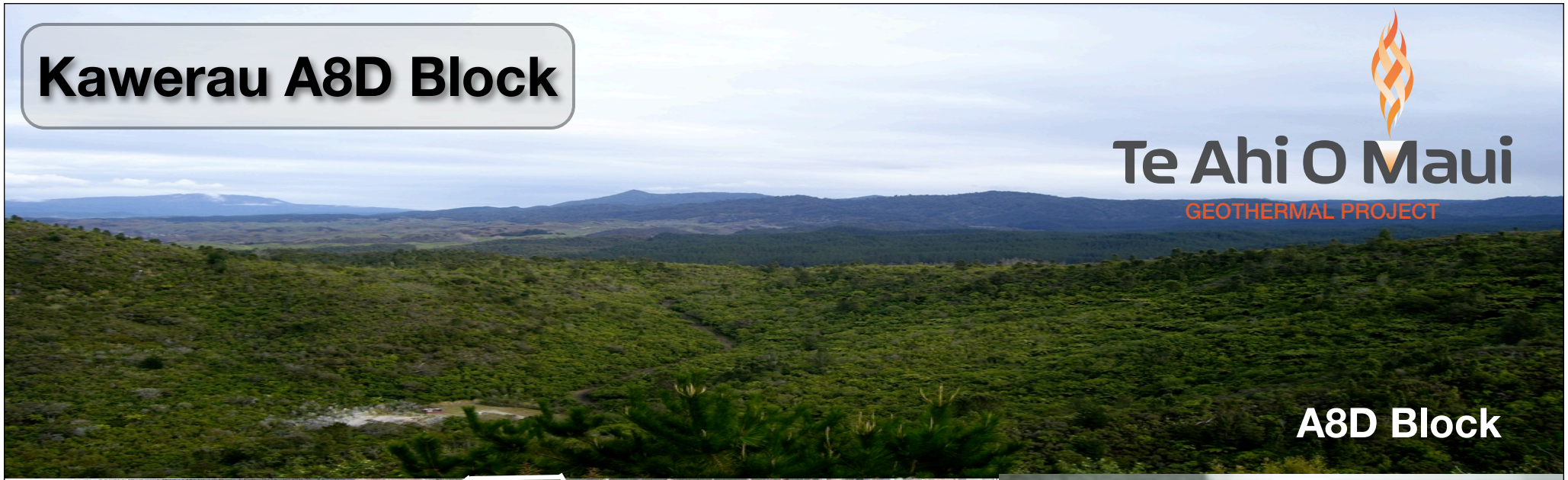
Wakapuaka 1B Block, Inc.
Nelson
(Wind Farm Exploration)

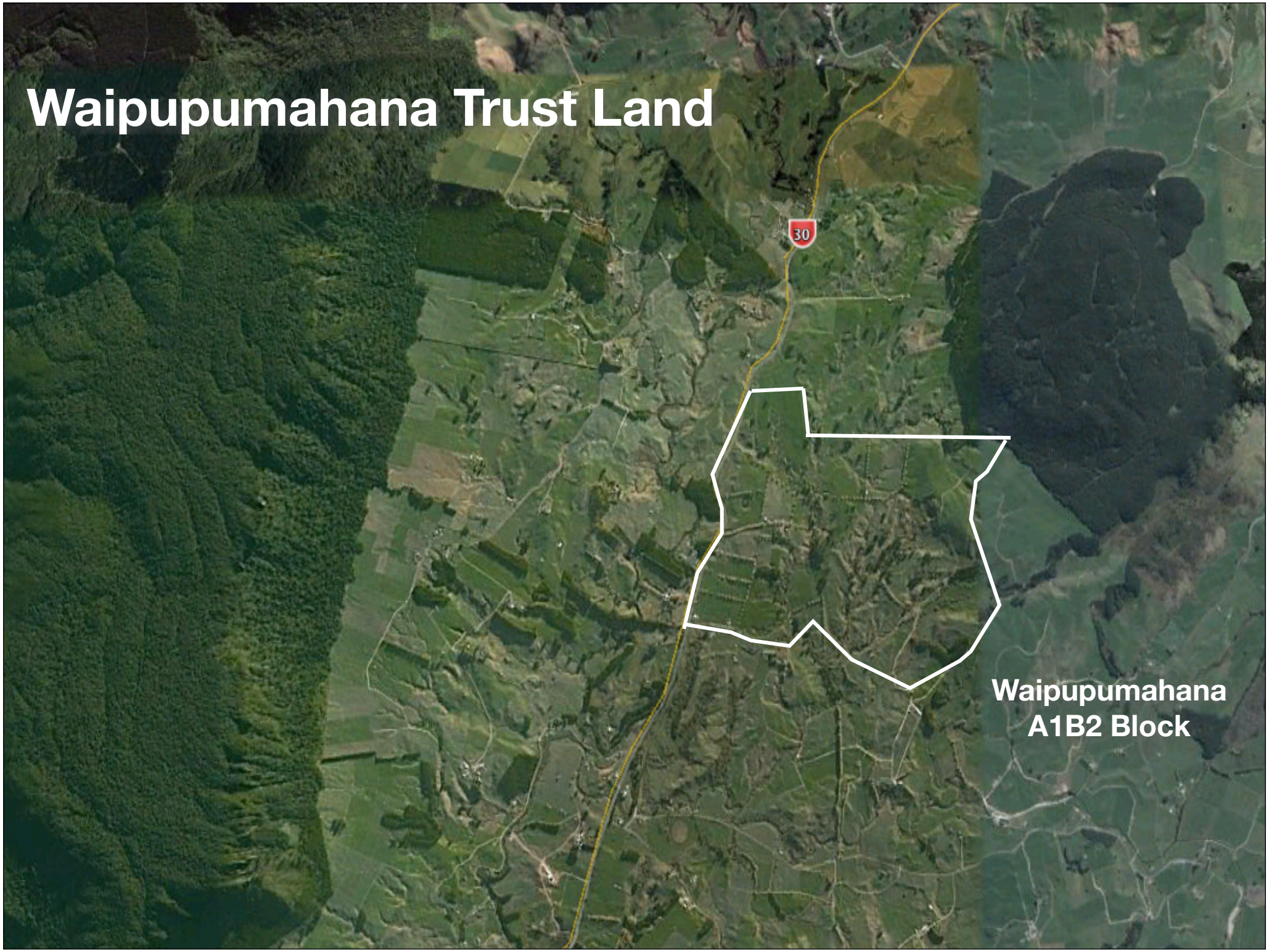

Taheke 8C Block
Currently continues to operate as a
Sustainable Sheep Farm
Hills full of Sheep and Lambs
Day before start of exploratory drilling program for
Taheke - Contact Geothermal Development - August 30, 2010


HILLS FULL OF SHEEP AND LAMBS

Kawerau A8D Block

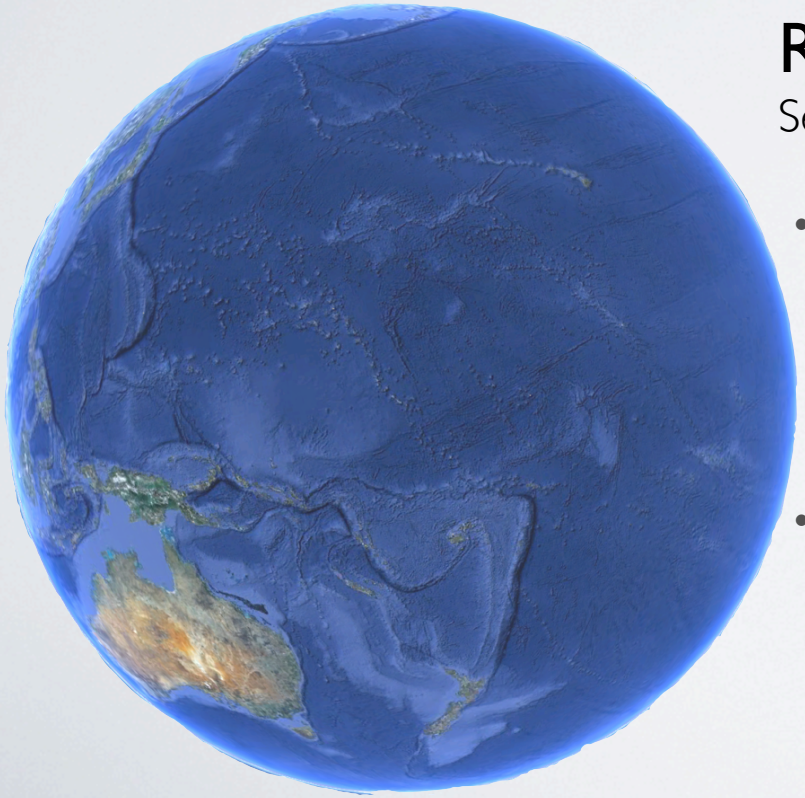
Te Ahi O Maui
GEOTHERMAL PROJECT




Waipupumahana Trust Land
30
Waipupumahana
A1B2 Block

Wakapuaka 1B Incorporation Land

WHAT IS THE N2N MODEL & HOW DOES IT WORK?

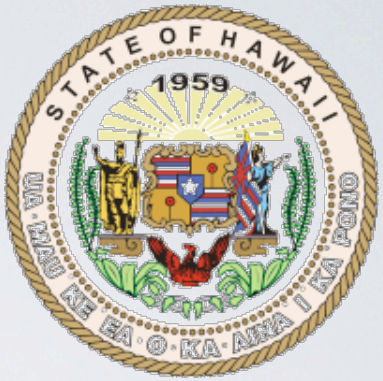


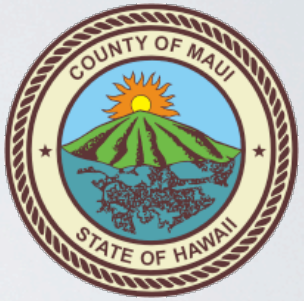
- **IDG Operates under the N2N & Community Collaborative Model in Indigenous Communities**
- **United Nations Declaration on the Rights of Indigenous Peoples** (Ratified in September 2007)
  - Recognizes the rights of the Indigenous Resource Owners to participate in the Development and improvement of their resources in an EQUITABLE WAY
  - Utilization of resources on Indigenous lands must be undertaken appropriately recognizing fundamental principles of protection of cultural sites and environmental sustainability and trust fiduciary principles

STAKEHOLDERS

(Community Collaboration Model)

- **State Government**
  - Establish Policy Framework - Legislature
  - Facilitate subzone designation, permits and regulatory process
  - Facilitate Tax Incentives
  - Revenue Bond
  - Public Utilities Commission (PUC)
  - Land Use Commission (LUC)
- **Local County and District**
  - Facilitate Regulatory Process (Fast Track and Streamline)
  - Obtaining Easements and access Rights
- **Local Community to Resource**
  - Residents
  - Environmental Stewards
  - Large and Small Business Community
  - Labor Groups
  - Agricultural Farmers
- **Native Hawaiian Community**
  - Hawaiian Agencies and Community Groups





IDG OVERVIEW

- ***Business Approach:***
  - Culturally Appropriate
  - Environmentally Sustainable
  - Socially Responsible
  - Economically Sensible and PONO

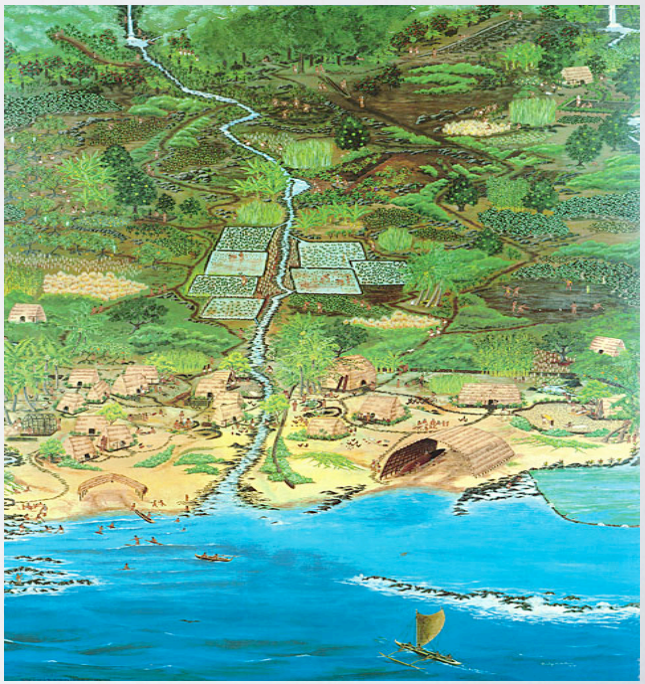
CULTURALLY APPROPRIATE

- **Oversight By Native Development Partners: Native to Native Model**
  - Cultural Protections undertaken in compliance with established judicial processes here in Hawaii
  - Project's Development Agreement (PDA) includes Cultural Protection Measures and Protocols for ALL Cultural Resources:
    1. Identification & Preservation of all cultural resources
    2. Utilization of cultural vehicles & mechanisms for project
    3. Retention of Project Consultants and Subcontractors for Cultural Protection
    4. Designation of Project "Footprint" & implementation of mitigation /curator plans if needed

Image of Hawaiian & Maori Ngātoroirangi

ENVIRONMENTALLY SUSTAINABLE

- **Problems resulting from dependency on FOSSIL FUELS AND RISING OIL COSTS:**
  - Fuel Toxicity
  - Landfill/Waste Issues
  - Greenhouse Gas emissions
  - Fossil Fuel Cost Increases
  - Security Issues - Political, Social and Food
- **Volatile and Unpredictable Oil / Refined Petroleum Market Pricing**
  - *Oil Prices expected to reach $200+ per barrel by 2013-2014*
- **Energy Self-Sufficiency for each Island via a diverse energy portfolio mix of Renewable Generation**



SOCIALLY RESPONSIBLE

- The Project is committed to:
  - Reducing Hawaii's Carbon Footprint and effectively address Global Climate Change Crisis for Hawaii and the South Pacific
  - **Community Collaborative Partnerships (CCP) © Model** = responsible use and fair distribution of island's natural resources
  - Benefit Sharing with Community Stakeholders from Project proceeds
  - Fair and Reasonable cost to ratepayers
  - Revenue Streams to State Trustee

BUSINESS DIRECT USE BENEFITS

Blue Lagoon, Iceland - Spa Bathing Facility created from excess Fluid from Geothermal Power Generation

BUSINESS DIRECT USE BENEFITS

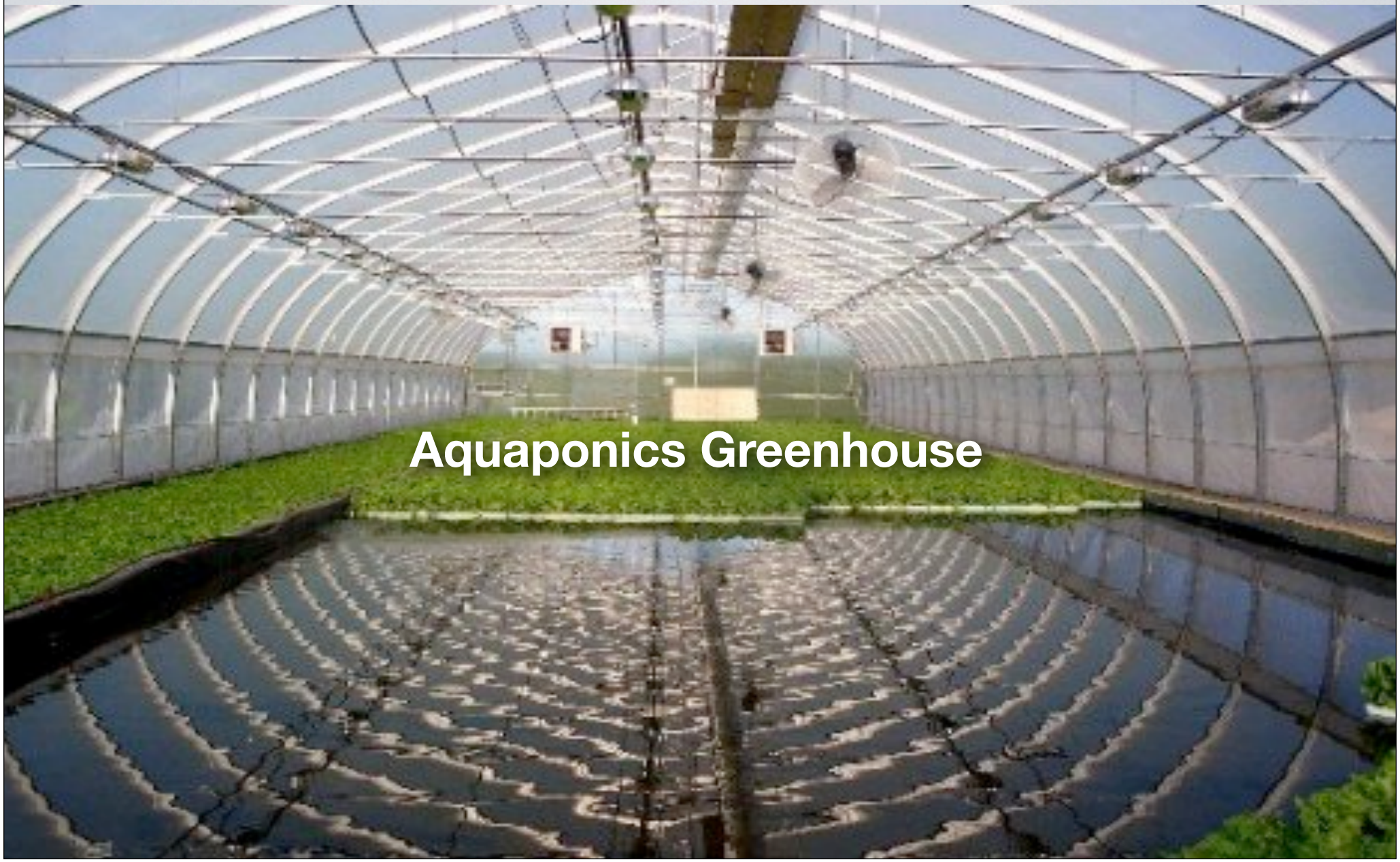
Timber Drying Operation

BUSINESS DIRECT USE BENEFITS

Food Drying Using Geothermal Steam

BUSINESS DIRECT USE BENEFITS

BUSINESS DIRECT USE BENEFITS



Police Arresting Protestors from Wao Kele 'O Puna Site

Abandoned Geothermal Well, Wao Kele 'O Puna Site

Community Protesting Wao Kele 'O Puna Geothermal Development

ASSESSING PAST MISTAKES AND PROBLEMS

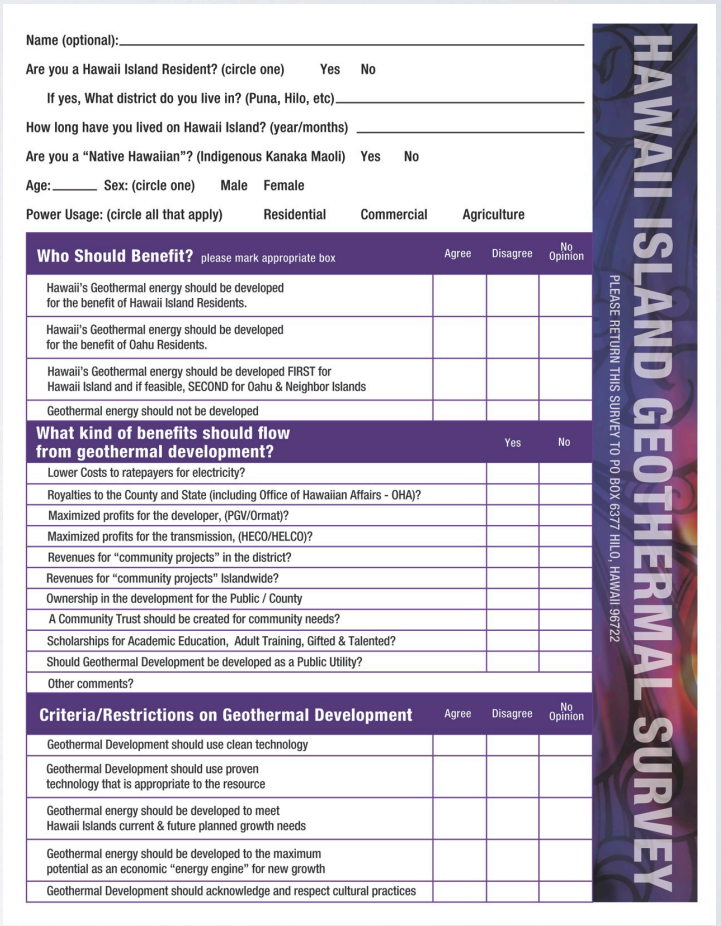
- Cultural issues - NO CONSULTATION
  - Selection of Site & Technology
  - Cultural access for gathering, Worship, Heritage Protection/Preservation
  - Negative Impact to Native "religious belief system" (Tutu Pele)
- Environmental Issues
  - Exploratory Problems & Dangers
  - Conservation Options were not pursued
- No Benefit for:
  - Local (Hawaii Island) Consumers
  - Native Hawaiians
  - Residents of Community
- No broader vision for Hawaii and its Residents (Native and Others)

BENEFITS FROM PAST EXPERIENCES

- Pele Defense Case has SET Standards for the Public and Native Stakeholders
- Development of Subsurface Estate need not Destroy or Damage Surface Estate
- EIS Laws (HRS Chapter 343) now Amended to include Cultural Impacts
- Community Involvement, Consultation and Education Should Precede Hearings and Permitting
- Native to Native and Community Collaborative Models create specific adaptions to Hawaii

ONGOING COMMUNITY SURVEY RESULTS

- Under IDG's Model of Geothermal Development we have found:
  - **97%** in Support in **Puna**, Hawaii
  - **95%** in Support in **Hilo**, Hawaii
  - **100%** in Support from Hawaii Island **Labor Groups**



Name (optional):_____

Are you a Hawaii Island Resident? (circle one) Yes No

If yes, What district do you live in? (Puna, Hilo, etc)_____

How long have you lived on Hawaii Island? (year/months) _____

Are you a "Native Hawaiian"? (Indigenous Kanaka Maoli) Yes No

Age:_____ Sex: (circle one) Male Female

Power Usage: (circle all that apply) Residential Commercial Agriculture

Who Should Benefit? please mark appropriate box	Agree	Disagree	No Opinion
Hawaii's Geothermal energy should be developed for the benefit of Hawaii Island Residents.			
Hawaii's Geothermal energy should be developed for the benefit of Oahu Residents.			
Hawaii's Geothermal energy should be developed FIRST for Hawaii Island and if feasible, SECOND for Oahu & Neighbor Islands			
Geothermal energy should not be developed			

What kind of benefits should flow from geothermal development?	Yes	No
Lower Costs to ratepayers for electricity?		
Royalties to the County and State (including Office of Hawaiian Affairs - OHA)?		
Maximized profits for the developer, (PGV/Ormat)?		
Maximized profits for the transmission, (HECO/HELCO)?		
Revenues for "community projects" in the district?		
Revenues for "community projects" Islandwide?		
Ownership in the development for the Public / County		
A Community Trust should be created for community needs?		
Scholarships for Academic Education, Adult Training, Gifted & Talented?		
Should Geothermal Development be developed as a Public Utility?		
Other comments?		

Criteria/Restrictions on Geothermal Development	Agree	Disagree	No Opinion
Geothermal Development should use clean technology			
Geothermal Development should use proven technology that is appropriate to the resource			
Geothermal energy should be developed to meet Hawaii Islands current & future planned growth needs			
Geothermal energy should be developed to the maximum potential as an economic "energy engine" for new growth			
Geothermal Development should acknowledge and respect cultural practices			

HAWAII ISLAND GEOTHERMAL SURVEY

PLEASE RETURN THIS SURVEY TO PO BOX 6377 HILO, HAWAII 96722

*Note: Blank surveys were not counted in total

STAKEHOLDER BENEFIT EXAMPLES

- Create Community Trust from shared Revenues of Project
- Secondary Small Business Opportunities:
- Steam and Energy use
  - Creation of Industrial Tech Park (Renewable Energy Focus)
  - Aquaponic Farming, Fruit/Vegetable/Fish drying, Bathing Facilities, Green/Hot houses, etc.
- Job Training and Onsite Employment Opportunities
- Scholarships and Educational Opportunities
- Fund Community Center & Agriculture Markets
- Building/Improving Parks and Beach Areas

Ngati Tuwharetoa Ki Kawerau Marae

Renovation paid for by part of project proceeds

Taheke Project Security Guard

Hawaii Energy Crisis

- Hawaii is most Oil Dependent and Energy Insecure State in the Union
- Hawaii Relies on IMPORTED Fossil Fuel for > 90% of its energy needs
- Hawaii exports $7 Billion USD annually for imported OIL
- Hawaii Ratepayers pay highest electricity rates in the USA
- Hawaii Public Safety and National Security Issues

HAWAII FISCAL CRISIS

- The State and County Governments are in the midst of a fiscal budgetary crisis
- New sources of income are needed to pay for critical services and renewable energy development

HAWAII'S ENERGY BOUNTY

- Hawaii has vast and extremely valuable renewable energy resources
- Public Ceded Land Trust Assets
  - Geothermal "minerals"
  - Ocean Resources (within 3 mile limit):
    - OTEC - Ocean Thermal Energy Conversion
    - Tidal / Surge / Wave
  - Wind / Solar Energy Developments on State Lands

HAWAII'S CURRENT POLICY FRAMEWORK

- Energy Agreement - October 20, 2008 (executed between Gov. Linda Lingle, State DBEDT, State DCCA, and HECO)
- Hawaii Clean Energy Initiative (HCEI) Program - April 2010 (adopted into law - Hawaii Revised Statutes Chapter 196)
- Did not prioritize development of State owned renewable resources, focus is on Tri-Island initiative - No Priority for "FIRM" power

HAWAII STATE ENERGY ISSUES

- Currently No State inventory of State owned energy resources
- Lack of Capital to invest & develop
- Lack of expertise in energy development
- No private sector Energy / Tech relationships in US or International Arena

PUBLIC / PRIVATE PARTNERSHIP PROPOSAL

- **IDG is Proposing to establish a Public / Private Partnership to develop the State's Geothermal resources as an asset of the Ceded Land Trust (CLT)**
  - Utilizing State Lands for development by way of a 50 year lease
- **The State is the Trustee of the CLT**
  - Public / native Hawaiians are shareholders of the CLT
  - Ceded land inventory should prioritize Geothermal Ceded Lands
- **State Lands (DLNR/DHHL) could be contributed to a Public / Private Partnership for the development of Geothermal Resources**
  - State would receive 6% of Gross Revenues
  - 50 Year lease with DLNR,/DHHL etc.

PUBLIC / PRIVATE PARTNERSHIP PROPOSAL (CONT.)

- **State "agency" owning land would receive:**
  - An interest in the project based on the value of its contribution of land and,
  - Annual land lease rent from the partnership fixed for the term of the lease
  - At end of lease Project ownership goes to the State
- **State optimizes its land asset value for higher income than standard lease rents**
  - IDG agrees to sell its equity portion at discounted fair market value to the State within the first 15 years, giving the State an ownership interest in project and earning more annualized cash flows, and Right of First Refusal on all other equity sales
- **Creates a Revenue Stream for the State during current Fiscal Crisis and in the future**

IDG DEVELOPER RESPONSIBILITY

- IDG has a working model for successful Geothermal Development consistent with Trust Fiduciary obligations
  - **Community-Based Development Models**
    - *Community Collaborative Partnerships (CCP)* ©
    - *Native to Native Model (N2N)* ©
- **IDG will be the Project Developer**
  - IDG will secure: Strategic Technical and Science Partners responsible for exploratory, drilling, plant construction and generation, operations, and maintenance
  - IDG will secure and structure project capital investment requirements and senior debt for the project

13 MW Geothermal Bore Test
(Kawerau, New Zealand)

Exploratory Drilling and Re-injection sites
(Rotorua, New Zealand)

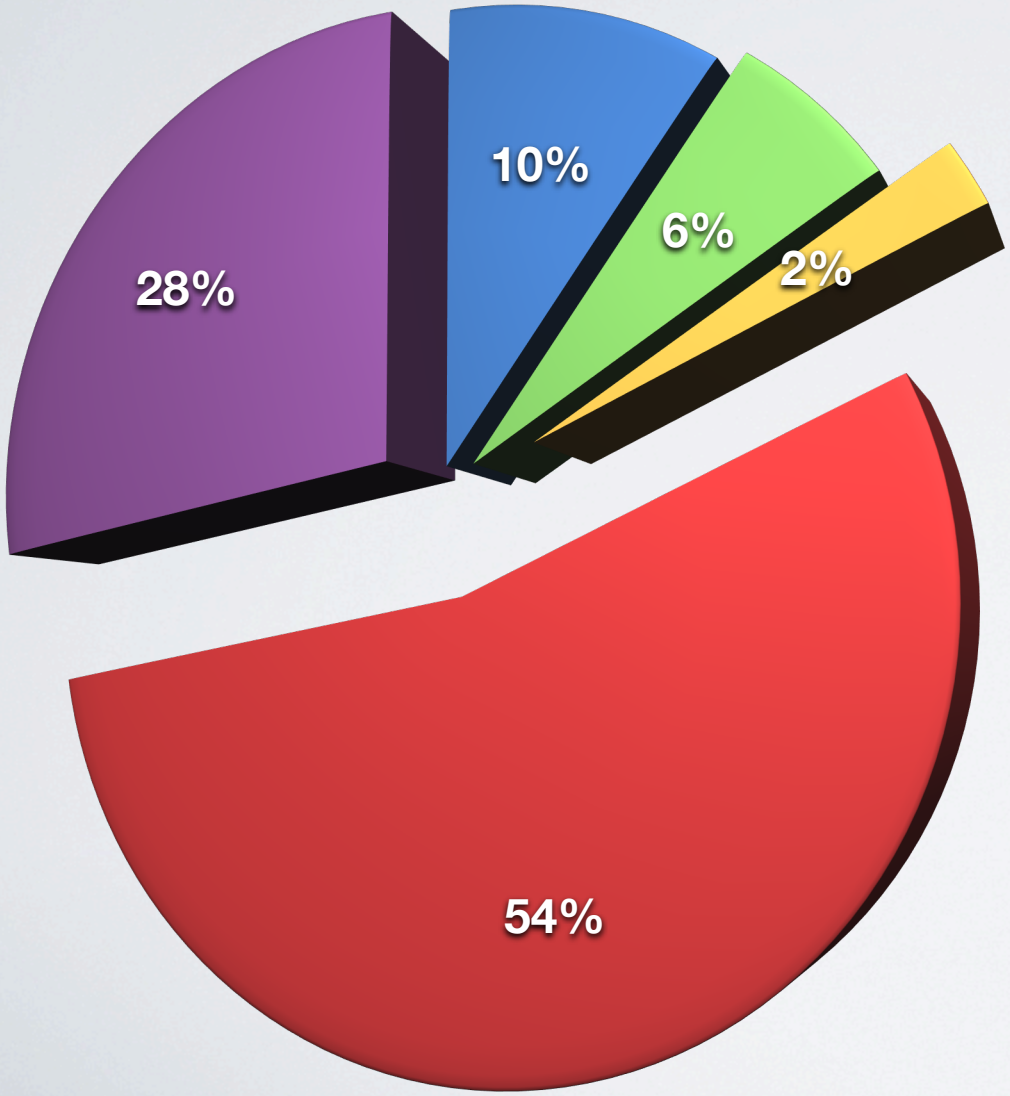
COMMUNITY BENEFITS

- **Projected Stakeholder Proceeds from 50 MW Geothermal Development:**

  - State Mineral Right Royalty Payments = 10% of Gross Income
    - *State of Hawaii Government = 5% of Gross*
    - *Hawaii / Maui County Government = 3% of Gross*
    - *Office of Hawaiian Affairs (OHA) = 2% of Gross*

  - Community Trust Beneficiaries = 2% of Gross Income (est.)
    - *Local Community*
    - *"Host" Community*
    - *native Hawaiian Community*
    - *Environmental Stewardship program*

50 MW Geothermal Project Projected Cash Flows



- State Royalty Payment
- Land Owner
- Community Trust
- Operating / Debt Service / Tax
- Cost of Capital / Developers' Equity

ESTIMATED ANNUAL BENEFIT TO STATE AGENCY

- **50 MW Geothermal Development Project Proceeds:**

- State of Hawaii Geothermal Mineral Right Royalty Payments = 10% of Gross Revenues = $5.5 M per annum

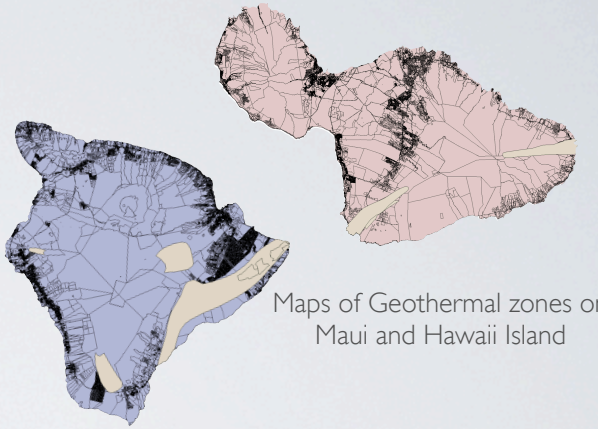
- Project Revenues for Land Contribution = 6% of Gross Revenues from Project = $3.5 M per annum

- Total revenues to State = ***$9 M per annum*** *from date of production*

$9 M x 46 years = $414 M over 46 years *(life of project)*

ESTIMATED REVENUES FOR USE OF STATE LAND

- **50 MW Geothermal/Firm Power Request For Proposal (RFP) on Maui coming up in 2011**
- **50 MW Geothermal/Firm Power Request For Proposal (RFP) on Hawaii Island coming up in 2012-2013**
- **100 MW preferred Model of Geothermal Development**



Maps of Geothermal zones on Maui and Hawaii Island

6% of Gross Revenues of a 50 MW project = $3.5 Million per annum

→

1000 MW of projects = $70 Million per annum

↓

50 MW project
vs
1000 MW of projects

(Appx. 50% of State of Hawaii's Peak Energy Demand)

↓

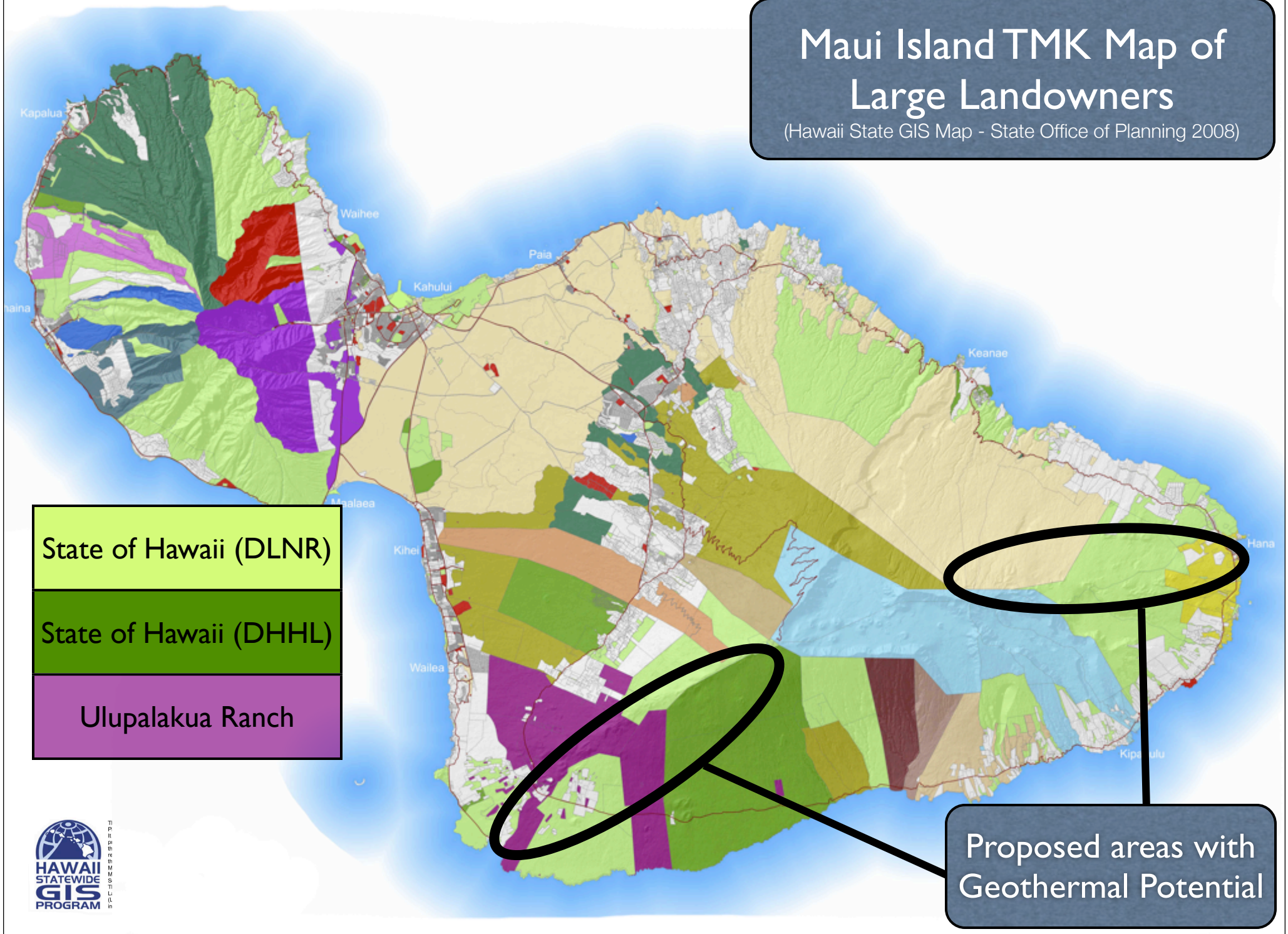
$161 Million = Total Value over life of project (46 years)

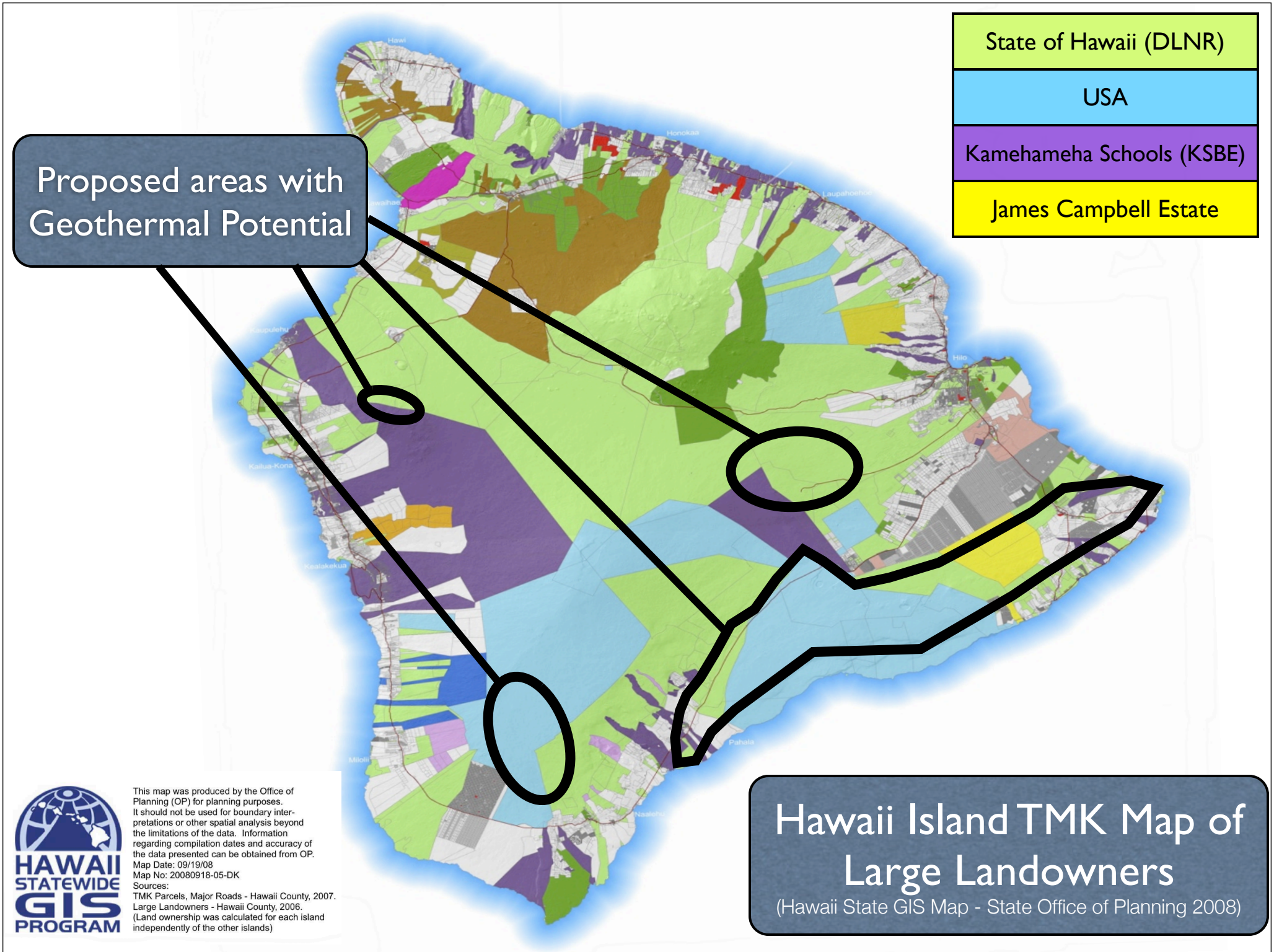
→

$3.22 Billion = Total Value over life of project (46 years)

Maui Island TMK Map of Large Landowners

(Hawaii State GIS Map - State Office of Planning 2008)





HAWAII STATEWIDE GIS PROGRAM

This map was produced by the Office of Planning (OP) for planning purposes. It should not be used for boundary interpretations or other spatial analysis beyond the limitations of the data. Information regarding compilation dates and accuracy of the data presented can be obtained from OP.
Map Date: 09/19/08
Map No: 20080918-05-DK
Sources:
TMK Parcels, Major Roads - Hawaii County, 2007.
Large Landowners - Hawaii County, 2006.
(Land ownership was calculated for each island independently of the other islands)

Hawaii Island TMK Map of Large Landowners

(Hawaii State GIS Map - State Office of Planning 2008)

New Approach to Hawaii Energy Policies

- **Proposed Terms for new Hawaii State Energy Policies based on Trust Principles**

1. State Trustee would participate at 6% of Gross Revenues
2. Geothermal should be established as the primary base-load firm power generation source for the State
3. The use of State energy assets should be given priority in any utility RFP for power generation over private land resources (Energy Resources should be the first lands inventoried)
4. State Policy should set priorities to govern and control electricity transmission based on Trust and Fiduciary principles
5. Rate Payor should benefit from actual production (generation) cost savings
6. Community Benefit package should be a requirement of development in Hawaii
7. State Royalty fees should be used for exploration and drilling to further new geothermal resources
8. Support for State Owned Public Utilities

New Approach to Hawaii Energy Policies (cont.)

- **State's mandate is to represent the best interest of the PUBLIC's Energy Security:**
  - The State on behalf of the public ratepayers and native beneficiaries should be the beneficiary of the income derived from the development of Geothermal resources as a Public Trust Asset
  - Geothermal resources are owned by the Public and native Hawaiian and should be managed as a public trust asset with fiduciary responsibilities (Public and native Hawaiians should receive direct benefits)


Mahalo Nui Loa
www.innovationsdevelopmentgroup.com