Evaluation of Alternative Ownership Options for Electric Utility Assets on the Islands of Oahu and Hawaii

FILSINGER ENERGY PARTNERS

HNEI
Hawai'i Natural Energy Institute
School of Ocean and Earth Science and Technology
University of Hawai'i at Mānoa

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Presentation Overview

- Introduction
- Overview of Potential Ownership Options
- Steps to Pursue Alternative Electric Utility Ownership
- Regulatory and Legislative Issues
- Operating Requirements for an Electric Utility
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Project Summary

In February 2016, the Hawaii Natural Energy Institute (“HNEI”), though the Research Corporation of the University of Hawaii (“RCUH”), contracted Filsinger Energy Partners (“FEP”) to provide consulting services and prepare a report for the purpose of reviewing the feasibility of alternative utility ownership options and to provide a plan that would provide guidance if it is decided to pursue the concept of a cooperative or publicly-owned utility on Oahu and/or Hawaii Island. The following presentation summarizes FEP’s analyses and findings.

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Hawai‘i Natural Energy Institute
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Hawaii Natural Energy Institute

- Established in 1974
- Research unit of the University of Hawaii at Manoa
- “Conducts essential energy research relevant to Hawaii and the world. Programs focus on identifying technically sound, cost effective solutions and practical strategies that can be implemented to deliver commercially viable renewable energy. The ultimate goal is to achieve a stable and cost-effective energy mix for Hawaii, while reducing our dependence on oil and other fossil fuel resources.”
- Hawaii State Legislature wrote HNEI into state statutes in 2007
- Mission expanded to include coordination with state and federal agencies

http://www.hnei.hawaii.edu/about-hnei

Filsinger Energy Partners

- Colorado-based energy consulting and engineering firm

- Provides high-level strategy, economic and market evaluation, corporate budget development, compensation program design, gross margin forecasting, power and fuel price forecasting, risk management, independent engineering, expert testimony, and complete interim management solutions to energy, industrial, and manufacturing companies and their stakeholders.

- Major projects have included:
  - Evaluation of potential municipalization of an electric distribution system
  - Price forecasting and modeling for a portfolio of hydroelectric power plants
  - Analysis of renewable energy policies and investment opportunities in the southwestern United States
  - Valuation of renewable, fossil, and nuclear power plants and contracts
  - Market advisor to Energy Future Holdings during Chapter 11 restructuring
  - Expert testimony in generation asset property tax appraisal litigations

FEP Leadership

Todd Filsinger has been active in the energy sector for over 25 years and is recognized globally as a leader and turn-around specialist in the energy sector. As an interim executive leader hired to turn companies around and lead them through difficult situations, Mr. Filsinger has guided several utilities through industry restructuring, developed complex strategies for utilities and renewable energy companies, and has been involved with the restructuring of a large number of merchant power companies. He has also been involved in the analysis and valuation of several utility systems that have faced municipalization attempts or privatizations. Additionally, Mr. Filsinger has assisted commodity-based businesses and has helped both regulated and merchant utilities across the United States in the areas of strategy, regulatory compliance and filings, asset divestiture, and capital allocation techniques. Notably, Mr. Filsinger served as Interim Chief Executive Officer and Interim Chief Financial Officer for Hawkeye Growth and was the leader of PA Consulting Group's Global Energy Practice from 2002 through 2010.

Gary Germeroth is a Managing Director at Filsinger Energy Partners. Mr. Germeroth is the project manager on the current Energy Future Holdings restructuring assignment and has been active in the energy restructuring space including Mirant, Calpine and NRG. Mr. Germeroth provides valuation, restructuring, expert testimony, risk management evaluation of both market and operating risks, and turn-around strategy for the energy, industrial and manufacturing industries. With approximately 35 years of managerial and financial experience in the energy sector, including over 25 years in the field of energy commodity risk management and approximately 10 years in the oil and gas operations and production sector, Mr. Germeroth possesses hands-on experience in establishing corporate objectives and managing the execution of these objectives throughout a company. Mr. Germeroth was the Chief Risk Officer of Calpine and he is proficient in all aspects of corporate finance, including reporting and evaluating results from operations, evaluating cash flows and creating meaningful liquidity sensitivities, assessing investment opportunities and estimating the costs of operational risks.

FEP Leadership

Jean Agras, PhD, is an applied economist known nationally for her work in energy price forecasting. She has an established reputation for critical thinking, helping her clients with complex energy issues such as project financing, wholesale energy markets and regulation, environmental markets and regulation, resource valuation, integrated resource planning and risk management. Dr. Agras has conducted complex valuations, including the income, replacement cost and market methods for coal, CCGT, IGCC, geothermal, solar and wind power assets. She has also been involved in estimation costs and techniques associated with generation, distribution and transmission asset construction costs. These generation estimates have been utilized in the derivation of market price forecasts across the United States. Prior to joining FEP, Dr. Agras led the group that produced the North American and European Power Market Reference Cases, Asset Valuator, North American Coal Reference Case and Simulation Ready Data products.

Paul Harmon, P.E., has nearly 30 years of experience in the energy industry and is recognized as a results-oriented leader, including growing a business from $20 to $33 million in revenues in three years. Mr. Harmon possesses a unique blend of management, technical, business development, financial and leadership skills and has applied them in the power generation and utility industries. Notably, Mr. Harmon's engineering and management experience includes a wide range of generation technologies including: gas- and oil-fired combustion turbines, gas- and oil-fired steam plants, combined cycle, cogeneration, coal-fired steam plants, nuclear (BWR, PWR and HTGR), binary cycle geothermal, hydroelectric, flash cycle geothermal, renewable energy, biomass, waste-to-energy, coal gasification and IGCC. Additionally, Mr. Harmon has managed and provided support to projects throughout the entire project life cycle including: planning and feasibility, conceptual design, contract and bid development, preparation of request for proposals, contract negotiation, project design review, project construction management, dispute resolution, start-up and testing, contract closeout, operation and maintenance, mothballing, decommissioning, demolition and reclamation.

Scope of Analysis

- Oahu and Hawaii Island
  - Oahu: Hawaiian Electric Company, Inc. (“HECO”)
  - Hawaii: Hawaii Electric Light Company, Inc. (“HELCO”)
- Electric utility assets
  - Excludes independently-owned generation assets
  - Excludes American Savings Bank and other non-utility assets currently owned by Hawaiian Electric Industries, Inc. (“HEI”), the parent holding company of HECO and HELCO
- Three types of utility ownership structures
  - Investor-owned
  - Public
  - Cooperative
- Two types of utility functional structures
  - Generation, transmission, and distribution
  - Transmission and distribution only

Disclaimer

Filsinger Energy Partners' discussion of valuation techniques, cost estimates, acquisition costs, and budgets for a hypothetical new utility is intended to provide a high level approximation only, and does not constitute an official appraisal opinion nor an attestation of fair market value. Nothing in this presentation is intended to provide a legal opinion. All numbers are subject to change as additional diligence is conducted and/or market conditions change.

This presentation does not consider alternative utility grid system management options, such an independent system operator or independent distribution system operator model. Furthermore, it does not attempt to estimate customer rate impacts that might result from changing from investor ownership to cooperative or public ownership of the utilities.

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Investor-Owned Utilities

- Raise debt and equity through public and/or private capital markets
- Management accountable to shareholders
- Usually overseen by Board of Directors
- Publicly-traded companies subject to SEC reporting requirements
- Interest on debt is taxable to investors
- Generate nearly 80% of electricity produced in U.S.

AEP KENTUCKY POWER®
A unit of American Electric Power

FPL®

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

GEORGIA POWER
A SOUTHERN COMPANY

PECO®
An Exelon Company

Xcel Energy®

PG&E Pacific Gas and Electric Company®

TEP
Tucson Electric Power

Public Utilities

- Government entities owned by taxpayers
- Range of sizes and functions
- Typically raise debt through municipally-backed general obligation or revenue bonds
- Interest on municipal debt often tax-exempt to investors
- Cannot issue tax-exempt debt to acquire privately-held electric assets (i.e. “Rostenkowski Rule”)
- Usually exempt from income, property, sales taxes; but often assessed “payment in lieu of tax” (aka “PILOT”)
- In 2013, over 2,000 public power organizations generated ~16% of electricity and served ~14% of customers in U.S.

Cooperative Utilities

- Democratically-controlled, not-for-profit organizations owned by the customers they serve
- Mainly serve rural areas
  - Nearly 80% of U.S. counties across 47 states
  - Only ~13% of customers in U.S.
- 838 distribution cooperatives and 66 generation and transmission cooperatives in U.S.
- Exempt from federal income taxes as long as at least 85% of income from member-owners to cover costs
- Unique financing options available
  - USDA Rural Utilities Service loans/loan guarantees
  - National Rural Utilities Cooperative Financing Corporation loans

Kaua'i Island Utility Cooperative
Your Touchstone Energy® Cooperative

TRI-STATE
Generation and Transmission Association, Inc.
A Touchstone Energy® Cooperative

POWER OF COMMUNITY
PEDERNALES ELECTRIC COOPERATIVE

DAKOTA VALLEY ELECTRIC COOPERATIVE
Your Touchstone Energy® Cooperative

ozarks ELECTRIC COOPERATIVE

BRAZOS ELECTRIC COOPERATIVE

Functional Considerations

- FEP considered two general types of electric utilities:
  - Generation, transmission, and distribution (i.e. “vertically integrated”)
  - Transmission and distribution only

Generation

Transmission

Distribution

Financing Options

- Most electric utilities are financed by a combination of debt and equity
- Each source of funds has certain advantages and disadvantages in terms of costs, availability, control
- Potential sources of financing depend on chosen ownership structure and may include:

Source of Financing	Notes
Capital Markets	• May raise public or private equity and/or debt • Market-based debt rates and covenants • Public capital may require additional financial reporting (to SEC, etc.) • Credit ratings matter
Municipal Debt	• May be tax-exempt to investors • Revenue bonds, general obligation bonds, special purpose revenue bonds • Legislative and/or voter approval required
USDA Rural Utilities Service	• Government-subsidized loans and loan guarantees • Financing based on % of project(s) in rural areas
National Rural Cooperative Finance Corporation	• Provides financing to member cooperative utilities • No credit rating required, but certain covenants apply (e.g. debt service coverage ratio, independent audits)

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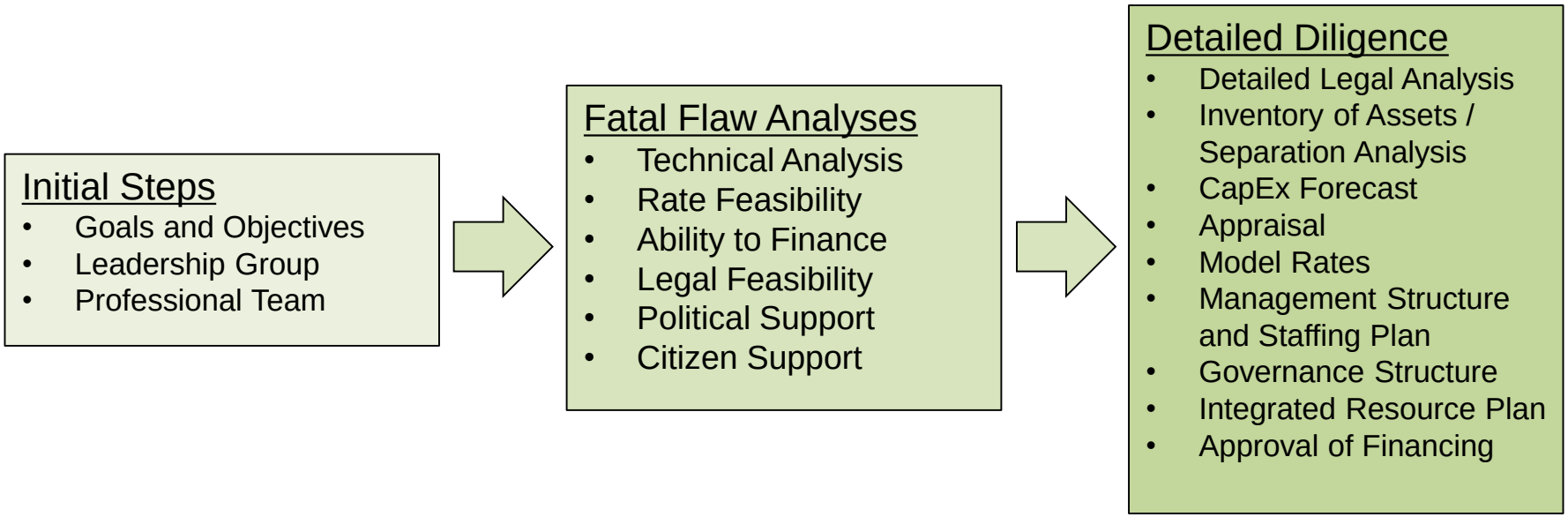
Three Stages of Analysis

FEP recommends that any attempt to create and operate an electric utility on Hawaii should proceed along three general stages of evaluation:



Initial Steps

The following steps should be taken first:

Define Goals and Objectives

- Policymakers should actively engage stakeholders to determine if and why they should pursue purchasing the electric system on Hawaii and/or Oahu
- Reasons for previous municipalization attempts have included: cheaper rates, local control, increased renewable generation, revenue for municipality, etc.
- Process will be public and heavily scrutinized
- Honesty and openness are paramount

Assemble Leadership Group and Professional Team

- Representative(s) of customers should be appointed to oversee evaluations
- Could be municipal or cooperative group, internal hire, or external expert
- This “Leadership Group” should assemble an external “Professional Team” that should include:
  - Legal counsel
  - Engineering and financial valuation expert
  - Public relations specialist

Fatal Flaw Analyses

Prior to conducting more extensive evaluation, the Leadership Group and Professional Team should first conduct various "Fatal Flaw Analyses" to identify any critical barriers to asset acquisition / utility formation and to gauge public support.

Technical Analysis

- High-level review to identify important engineering and technical factors
- Examples: necessary electrical interconnections, potential sources of purchased power, customer demand requirements, need for additional generation, ability to meet Renewable Portfolio Standards

Rate Feasibility

- Initial forecast of retail electric rates under a new ownership structure and comparison to status quo
- Higher rates may constitute a "fatal flaw"
- Important to run multiple scenarios around potential acquisition and operating costs
- Political factors are important but difficult to assess

Fatal Flaw Analyses…continued

Ability to Finance

- Based on rate forecast, develop income projections and assess financing options and requirements
- Should conduct debt service coverage test
- Must identify potential risks to utility cash flows (e.g. increased fuel costs, more off-grid generation, storm-related damages, etc.)

Legal Feasibility

- Should consult legal counsel regarding any regulatory and/or legislative requirements or barriers
- Topics to consider should include: eminent domain law, state utility and public finance laws, Hawaii Public Utilities Commission regulations, utility franchises and/or Certificate of Public Convenience and Necessity

Political and Citizen Support

- Critical to understand the support of citizens and policymakers
- Ability to address potential labor disputes early in the process
- Should maintain strong and active public relations effort, backed by factual information

Detailed Diligence

If no fatal flaws are identified, Leadership Group should engage the Professional Team to conduct more thorough analyses. These analyses should have requisite detail to proceed to seller negotiations, regulatory proceedings, and potential litigation.

Detailed Legal Analysis

- Should attempt to map out various negotiations and regulatory proceedings necessary to close on acquisition and operate utility
- Develop and discuss legal strategies
- Cost and timing estimates will be helpful

Inventory of Assets and Separation Analysis

- Detailed analysis of all assets to be purchased, including: electric infrastructure, vehicles, office buildings, etc.
- This data may not all be publicly available
- Fieldwork and site visits will likely be necessary
- Engineering professional should plan how island(s) will separate purchased assets from any non-purchased components of electrical system

Detailed Diligence…continued

Capital Expenditures Forecast

- Multiyear cost budget should be developed for maintenance of existing assets and construction of new ones

Appraisal

- Financial valuation professional should appraise the fair market value of all assets to be purchased
- Analysis should consider use of three methods:
  - Income Approach
  - Cost Approach
  - Market Approach
- Appraisal will utilize asset inventory and capital expenditures forecast

Model Consumer Rates

- Should conduct detailed forecast of customer rates by rate class (e.g. residential, commercial, industrial)

Detailed Diligence…continued

Develop a Management Structure and Staffing Plan

- Will provide insights into operational and overhead cost requirements
- Should include transition plan for existing utility employees
- Subject to change once utility is operational

Develop a Governance Structure

- Will utility be overseen by county or state government, an independent utility board, or a cooperative organization?
- How will executive leadership be elected/appointed? What are term lengths?
- What authorities will leadership team have, and what authorities will require voter referendum?

Integrated Resource Plan for 5 and 10-Year Planning Horizons

- Common planning framework for regulated utilities across U.S.
- “IRP” will identify long-term supply and demand factors, including: customer load projections, transmission constraints, preferred future generation resources, potential for demand-side management and energy efficiency

Cost and Timing Estimates

Analysis / Activity	Preliminary Cost Estimate	Preliminary Time Estimate
Definition of Goals/Objectives	Internal costs only	60 – 90 days
Appoint Leadership Group and Professional Team	Internal costs only	30 – 90 days
Fatal Flaw Analyses	$90K – $300K	60 – 120 days
Detailed Legal Analysis	$80K – $300K excluding regulatory/litigation support	30 – 90 days
Inventory of Assets and Separation Analysis	Validate existing inventories: $90K – $300K	60 – 120 days
	Develop new inventories: $300K+ per island	120+ days
Appraisal and Valuation including Future Capital Expenditures Budget	$90K – $300K per island	60 – 120 days
Model Customer Rates and Compare to Status Quo	$30K – $100K	60 – 90 days
Management/Staffing and Governance Plans	Mostly internal costs with possibility of professional fees	30 – 90 days
Integrated Resource Plan for 5-10 Years	$60K – $150K per island	60 – 120 days
Approval of Financing	Likely financing fees from 1% to 3% of transaction value	60 – 180 days
Negotiations and Legal/Regulatory Proceedings	Dependent upon multiple factors	TBD

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Key Regulatory and Legislative Issues

Any serious exploration of an alternative utility ownership structure should closely explore impacts of the following Hawaii laws and regulations:

Renewable Portfolio Standards

- Bill passed in 2015 requires 100% of energy sales in the state to come from renewable resources by 2045
- Interim targets in 2020 (30%), 2030 (40%), 2040 (70%)

Eminent Domain Law

- Hawaii Revised Statutes ("HRS") § 101
- Grants right to public utilities and others engaged in production and delivery of power
- Condemnation or voluntary action
- Courts prioritize eminent domain cases to ensure expeditious adjudication

Certificate of Public Convenience and Necessity ("CPCN") & Franchises

- HRS § 269-7.5 requires public utilities to obtain CPCN from Public Utilities Commission
- Exception made for utilities that hold franchise or charter granted by state legislature or executive

Negotiations and Legal / Regulatory Proceedings

In addition to aforementioned steps (e.g. “Fatal Flaw” and “Detailed Diligence” analyses), leadership team should prepare for seller negotiations and various legal/regulatory proceedings.

These additional steps may include any or all of the following:

- Formation of an Electric Utility
- Negotiations with Incumbent Utilities
- Condemnation Proceedings
- Transfer of Franchise(s)
- Stranded Cost Proceeding

These steps may incur significant time and expenses (e.g. legal fees), and should be considered additional to previously-discussed actions.

Note: FEP cannot provide legal advice and recommends consultation with legal counsel experienced in these matters

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Operating Requirements

A typical public or cooperative utility, of comparable size to Hawaii's island systems, would contain the following functional departments:

- Chief Executive Officer
- Operations and Maintenance
- Engineering and Planning
- Power Supply
- Administrative Services
- Legal Services

In 2015, HECO and HELCO reported approximately $285 million and $63 million in non-fuel, non-purchased power operating expenditures, respectively.

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Case Studies Overview

Several cities and cooperative groups have sought to acquire and manage the electric systems of investor-owned utilities.

FEP examined in detail the experiences of:

- City of Boulder, Colorado
- City of Las Cruces, New Mexico
- Kauai Island Utility Cooperative

Additionally, FEP researched the following successful electric utility municipalization attempts:

- Winter Park, Florida
- Jefferson County, Washington

CASE STUDY: City of Boulder, CO

- Progressive university town near Denver
- Currently engaged in efforts to municipalize electric distribution system
- Population: ~100,000

2005

- City hires consultant to explore municipalizing the city's electric system in anticipation of the 2010 expiry of a 20-year franchise agreement with Xcel Energy

2007

- City staff produce report estimating personnel, operating costs, overhead requirements for electric utility

2010

- City does not renew exclusive franchise agreement with Xcel Energy
- Voters approve "utility occupation tax" to replace lost revenues

2011

- City hires consultant to produce updated feasibility study
- Voters narrowly approve tax increase and allow City to establish and finance a utility if certain conditions are met

2012

- City hires utility director who becomes highest-paid City employee

2013

- City determines that it can provide cheaper rates while increasing renewable energy
- Ordinance passed to allow City to proceed with condemnation
- Voter referendum limits acquisition debt to $214M

2014

- City officially forms utility
- Xcel sues City but case is dismissed on procedural grounds
- City files condemnation case in District Court

2015

- City issues RFP for purchased power
- Court dismisses condemnation case; City must first seek PUC approval
- City files case with PUC
- Xcel motion to dismiss case partially approved

2016

- In years 2012-2015, City spent >$6.9M on utility efforts
- City is presumed to be conducting discovery and in the process of revising its case before the PUC

CASE STUDY: City of Las Cruces, NM

- Second largest city in New Mexico
- Large university and military presence
- Population: ~100,000

Late 1980s

- City begins to explore possibility of municipalizing electric system owned by El Paso Electric
- Belief that city-owned utility could reduce customer rates by ~20%
- Ad-hoc leadership group and professional team assembled

Early 1990s

- City passes ordinance to form municipal electric utility
- Engineering consultant estimates acquisition costs
- City holds bond election, which passes
- Subsequently, City issues $72.5M in revenue bonds, $36M in general obligation bonds, and additionally borrows from City fund
- Power supply contract signed with neighboring utility

Late 1990s

- State legislature approves measure enabling municipalization to proceed
- FERC Order 888 mandates open-access to transmission lines
- Administrative law judge rules that stranded costs owed to incumbent utility would be ~$30M, based on 1998 transaction date
- City builds electric substation to serve customers

Early 2000s

- Increasing uncertainty about City's ability to reduce customer rates
- Significant turnover of City leadership since utility efforts began
- City reaches compromise to end municipalization attempt when El Paso Electric agrees to pay City costs already incurred and to purchase substation

CASE STUDY: Kauai Island Utility Cooperative

- "America's newest electric cooperative"
- Success story of a friendly utility acquisition
- Example of high levels of renewable energy integration on a relatively small and isolated island system
- Population served: ~70,000

Late 1990s

- KIUC is formed as a non-profit cooperative by a group of Hawaii business leaders and professionals
- Kauai Electric, a subsidiary of Citizens Utilities Company, owns and operates the island's electric grid

2000

- KIUC and Citizens enter into a consensual purchase and sales agreement for the consideration of $270M
- Both parties submit an application to the Hawaii Public Utilities Commission for approval
- HPUC denies the transaction, deeming it not in the public interest, due to perceived risks and KIUC's finances

2002

- KIUC and Citizens submit a revised application to HPUC with purchase price of $217.5M and preapproved financing for KIUC
- HPUC approves sale, subject to stipulations agreed upon by transacting parties and intervenors

2009

- KIUC adopts a primary goal of increasing renewable energy generation to 50% by 2023
- 2009 renewable generation accounts for 13% of total

Today

- By the end of 2015, 37% of Kauai's power comes from renewable sources
- ~24MW of new commercial-scale solar, purchased power from a 7MW biomass facility, and a ~10x increase in residential rooftop solar
- Since 2000, KIUC's variable residential rates have grown slower than the rest of Hawaii and the price of oil

Other Case Studies

Winter Park, FL

- Franchise agreement with Progress Energy Florida contained option to purchase distribution system at expiration of 30-year term
- System served ~13,000 customers
- Purchase price determined by arbitration
- Stranded costs found to be ~1/3 of system value
- City took control of system in 2005
- Customer rates ~0.34% higher than investor-owned utility from 2005-2011

Jefferson County, WA

- 2008 voter referendum led to formation of public utility
- Puget Sound Energy agreed to sell distribution system, serving ~18,000 customers, in 2010
- Public utility financed by USDA RUS; procured power from BPA
- Transaction closed in 2013

Lessons Learned

- Clear articulation of goals and objectives
- Establishment of a defined leadership team
- Due diligence and fatal flaw analysis
- Importance of approved financing
- Plan to purchase power (if distribution-only utility)
- Consideration of stranded costs and separation costs
- **Advantages of a consensual transaction**