



HAWAII ENERGY

Conservation and Efficiency Program



EXECUTIVE BRIEFING FOR

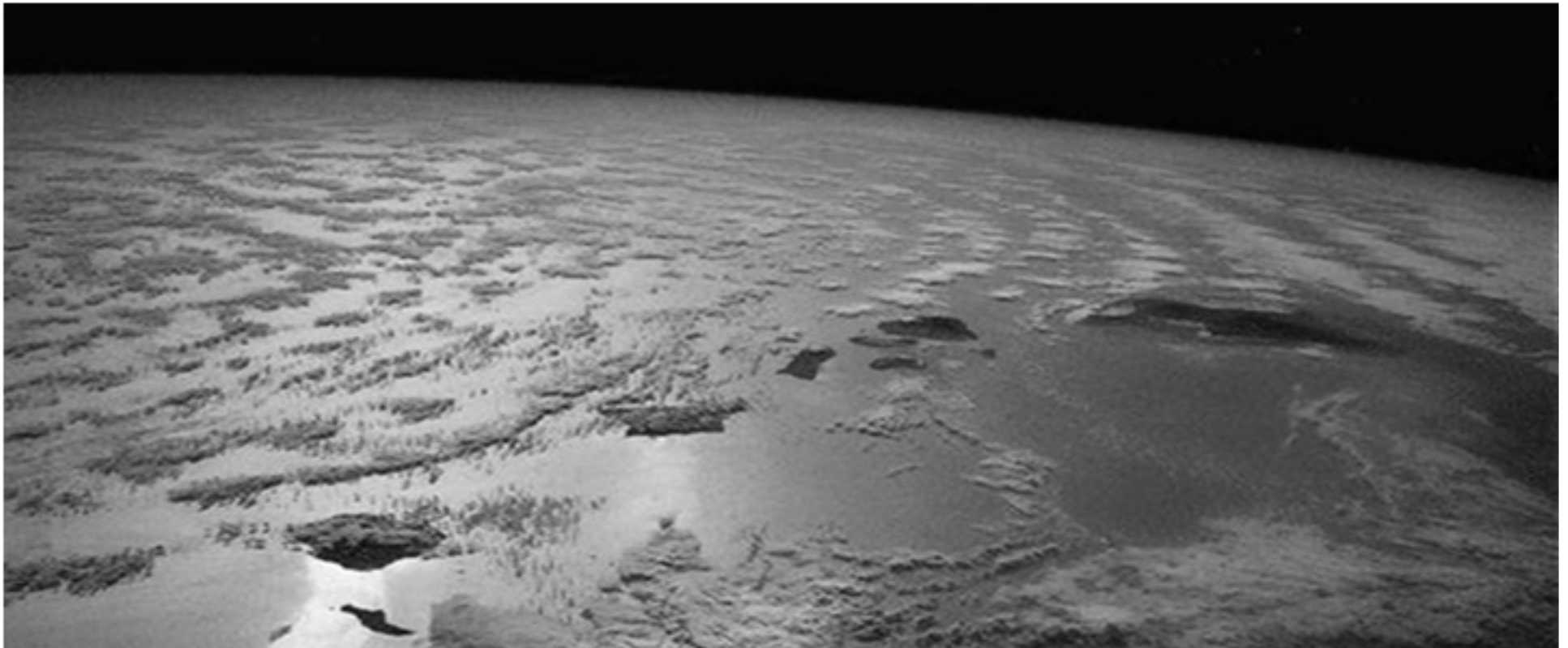
Advanced Performance Group for Efficiency and Energy Conservation (APGEC)

H. Ray Starling, Program Director

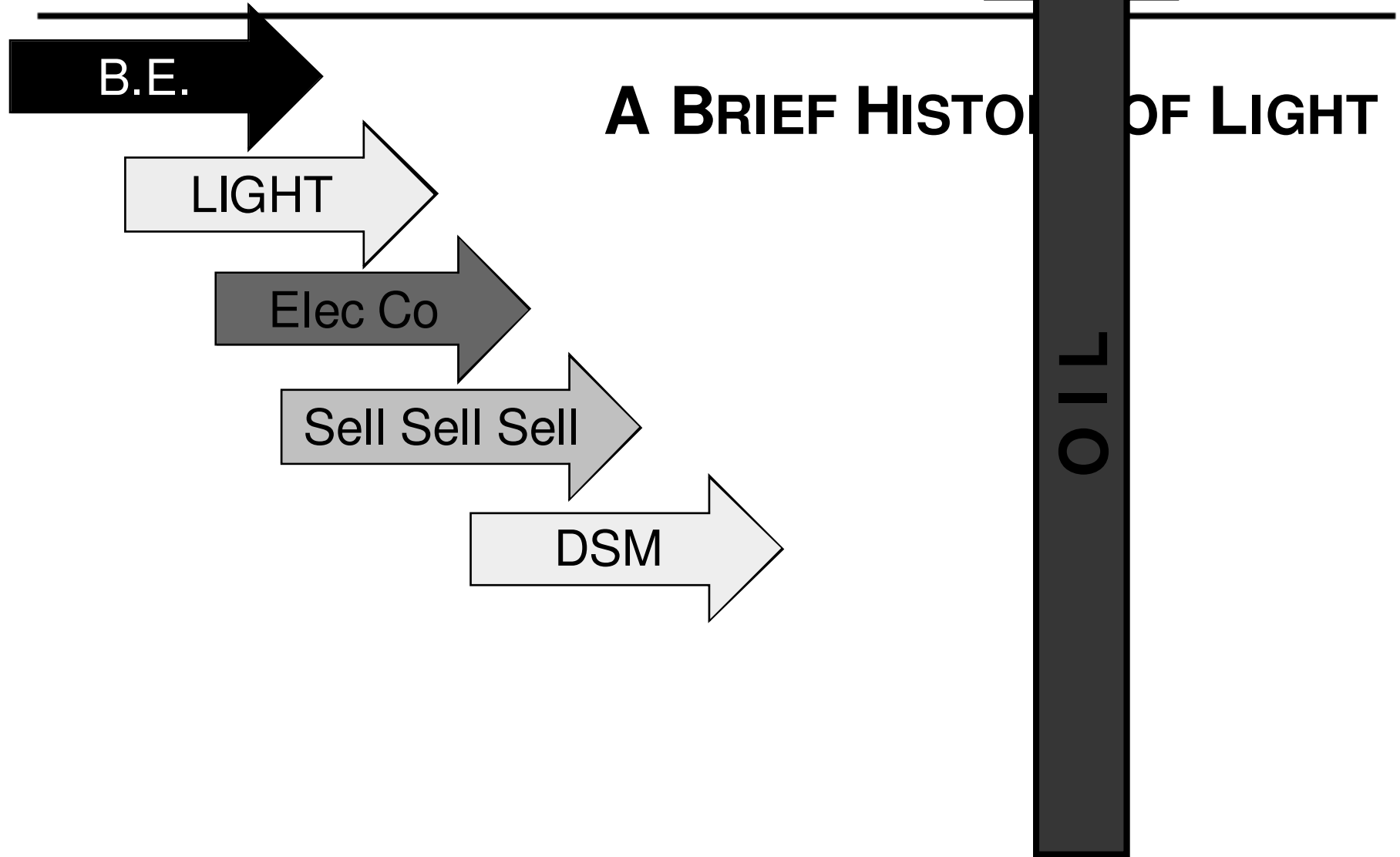
PUBLIC BENEFITS FEE ADMINISTRATOR (PBFA)

April 10, 2014

THE PROBLEM



THE PROBLEM



THE PROBLEM

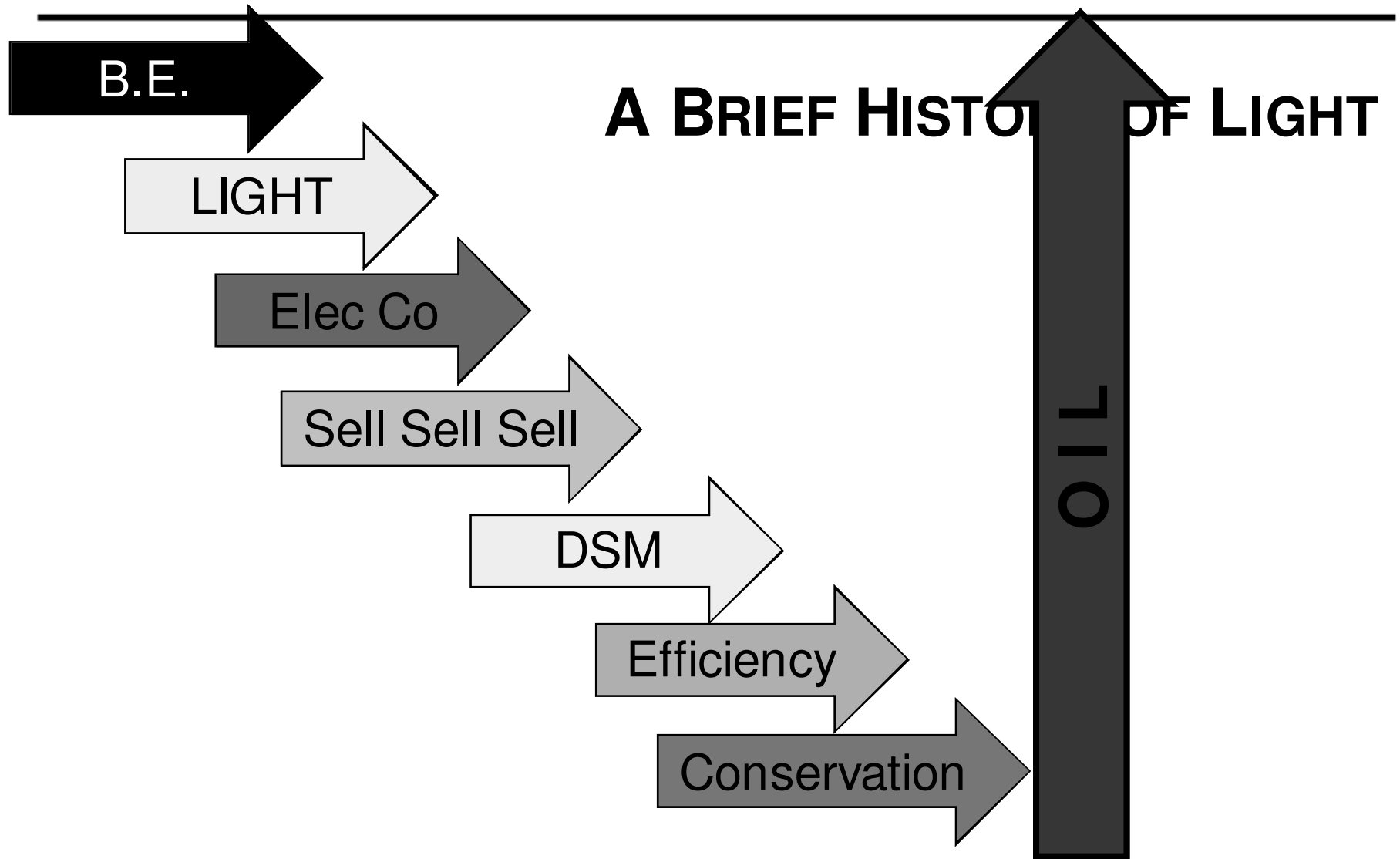
- **46.3 million barrels of oil were imported for Hawaii's total energy use over the past year. (Grd transport / Air-Sea transport / Electricity)**
 - That's 36 barrels of oil for every man, woman and child living in Hawaii
- **\$5.09 billion left the state last year to pay for imported petroleum.**
 - \$4,000 for every person living in Hawaii.
- **11.3 million barrels of petroleum were burned by the Hawaii utilities last year to make electricity.**
 - That's around \$1.5 billion per year at the prices we pay for oil
- **The average residence in Hawaii uses 615 kilowatt hours per month.**
 - That's \$210 - \$270 per month spent on electricity, depending on island

THE PROBLEM

- **Hawaii ranks #1** nationally in electric energy costs
 - Residential rates (schedule R) as of March 1, 2014

44.40 cents/kWh	Lanai
44.06 cents/kWh	Molokai
37.79 cents/kWh	Hawaii Island
36.02 cents/kWh	Maui
33.14 cents/kWh	Oahu
11 - 12 cents/kWh	<u>U.S. average</u>

FIX THE PROBLEM



A BRIEF HISTORY OF LIGHT

B.E.

LIGHT

Elec Co

Sell Sell Sell

DSM

Efficiency

Conservation

OIL



THE FIX - NEGAWATTS

A Kilowatt-hour
is a terrible



thing to waste!

Kilowatt hour cost = 34 – 44 cents

Negawatt hour cost = 2.3 cents

THE FIX – NEGAWATTS FOR EVERYBODY

- Hawaii Energy: State's ***Energy Conservation and Efficiency Program***
- Operated by LEIDOS as the Public Benefits Fee Administrator (PBFA)
- LEIDOS (SAIC) - First 3rd party PBFA statutorily authorized and PUC mandated
- T&M contract with the PUC with term originally from Mar 3, 2009 until Dec 31, 2013
- Contract extended to Dec 31, 2015 w/ possible extension until Dec 31, 2016
- Covers the five islands served by the HECO companies (HECO, MECO, HELCO)
- Ratepayer-funded: PY2013 Public Benefit Fee at 1.5% (\$33.6M / yr) – 30/70 split
- PUC oversight team: 3rd Pty Contract Manager and 3rd Pty EM&V Evaluator
- LEIDOS advances \$\$ and invoices PUC for recovery; incentives are a pass through
- \$56K monthly holdback on invoice funds for performance incentive (\$700K annually)
- Annual Plan sets goals/budget for PY – kWh, kW, TRB, Isl Equity, Transformation
- On-Bill Financing Program added in PY2012

HAWAII PUC COMMISSIONERS AND PBFA CONTRACT MANAGER



Mike Champley
Commissioner
*Engineer and Former Executive
at Detroit Edison Electric (DTE)*



Hermina Morita
PUC Chair
*Former Chair of
House Energy Committee
(Up for reappointment)*

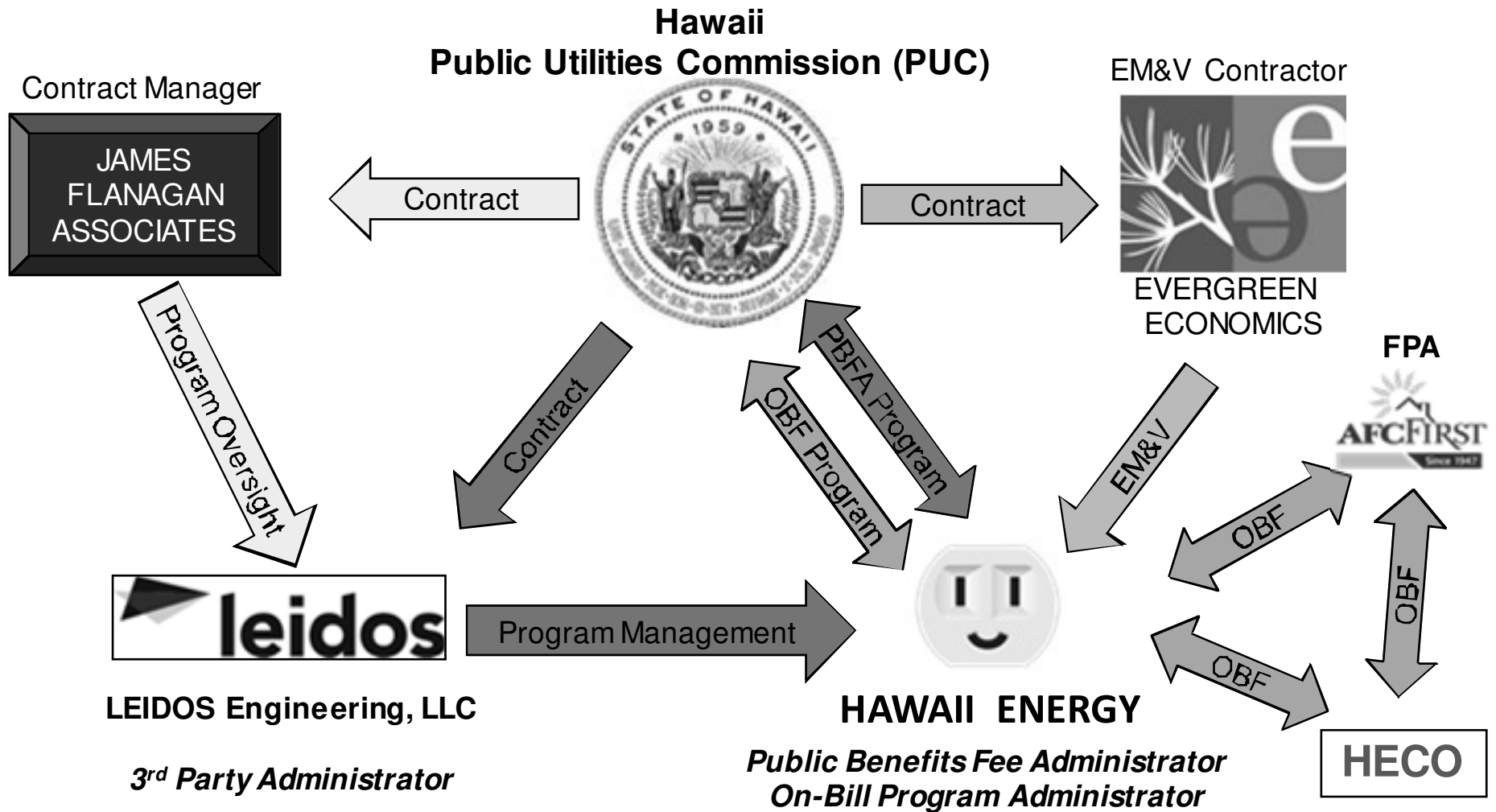


Lorraine Akiba
Commissioner
*Attorney and
Former Chair of Hawaii
Democratic Party*

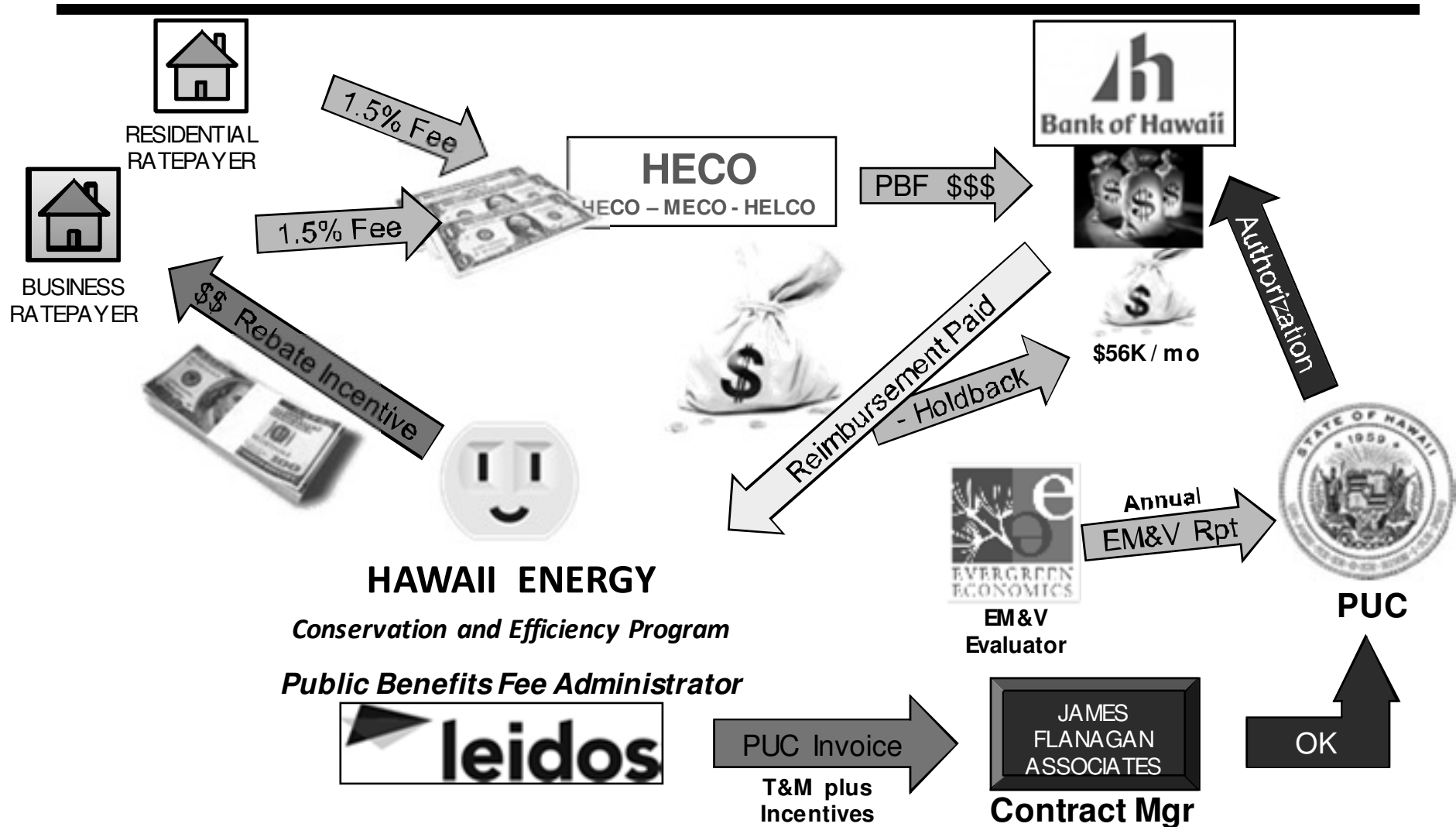


Jim Flanagan
PUC Contract Manager
*Former Energy Efficiency
Program Manager at PG&E*

HAWAII PROGRAM OVERVIEW

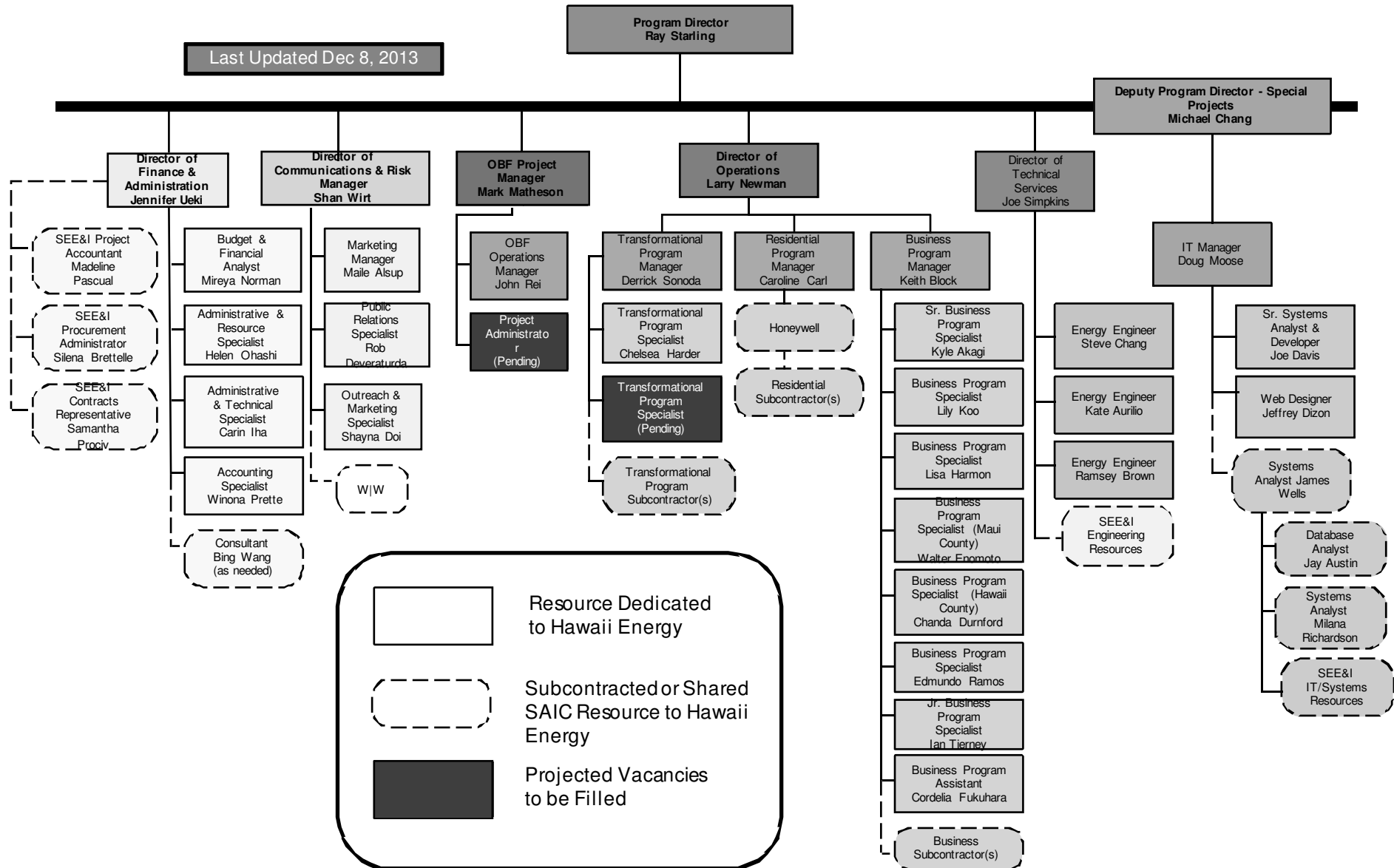


OVERALL PROGRAM PROCESS



Hawaii Energy Organization Chart

Last Updated Dec 8, 2013



Resource Dedicated to Hawaii Energy
 Subcontracted or Shared SAIC Resource to Hawaii Energy
 Projected Vacancies to be Filled

PY2013 PROGRAM BUDGET

- PY2013 Budget (Jul 1, 2013 – Jun 30, 2014)
 - \$33.6M Total (not counting OBF)
 - \$13.9M Residential 45%
 - \$17.0M Business 55%
 - 70% incentive - \$23.4M
 - 30% non-incentive - \$10.1M
 - NEW: OBF (On-Bill Financing) - \$2.5M ?



Hawaii Energy Efficiency Program Revised Annual Plan Budget - September 23, 2013	PY13 Budget
Residential Programs	
Residential Program Ops and Management	
REEM	2,126,529
CESM	33,755
RESM	101,263
RHTR	236,281
Subtotal Residential Programs	2,497,828
Residential Market Evaluation	236,281
Residential Outreach	641,334
Total Residential Non-Incentive	3,375,443
Residential Incentives	
REEM	7,985,697
CESH	25,000
RESM	690,000
RHTR	791,742
Subtotal Residential Incentives	9,492,439
Residential Transformational	1,054,715
Total Residential Incentives	10,547,154
Total Residential Programs	13,922,597
Business (C&I) Programs	
Business Programs Ops and Management	
BEEM	1,155,152
CBEEM	742,598
BESM	742,597
BHTR	495,065
Subtotal Business Programs	3,135,412
Business Evaluation	206,277
Business Outreach	783,853
Total Business Non-Incentive	4,125,542
Business Incentives	
BEEM	4,520,800
CBEEM	2,573,026
BESM	3,253,544
BHTR	1,254,500
Subtotal Business Incentive	11,601,870
Business Transformational	1,289,097
Total Business Incentives	12,890,967
Total Business Programs	17,016,509
Supporting Services	
Supporting Services	2,091,908
Total Supporting Services	2,091,908
Subtotal Non-Incentive (Prior to Tax)	9,592,893
Less Performance Incentives (Prior to Tax)	(668,500)
Subtotal Non-Incentive Less Performance Incentives (PI)	8,924,393
Total Tax on Non-Incentive Without PI	420,517
Performance Incentive Award (Inclusive of Tax)	700,000
Subtotal Non-Incentive Billed	10,044,910
Subtotal Residential and Business Customer Incentives	21,094,309
Subtotal Transformational Incentives	2,343,812
Subtotal Customer and Transformational Incentives	23,438,121
Sub-Total Estimated Contractor Costs	33,483,032
Performance Awards in Excess of Target Levels	133,000
Total Estimated Contractor Costs, including Performance Awards in Excess of Target Levels	33,616,032



Hawaii Energy

Conservation and Efficiency Program

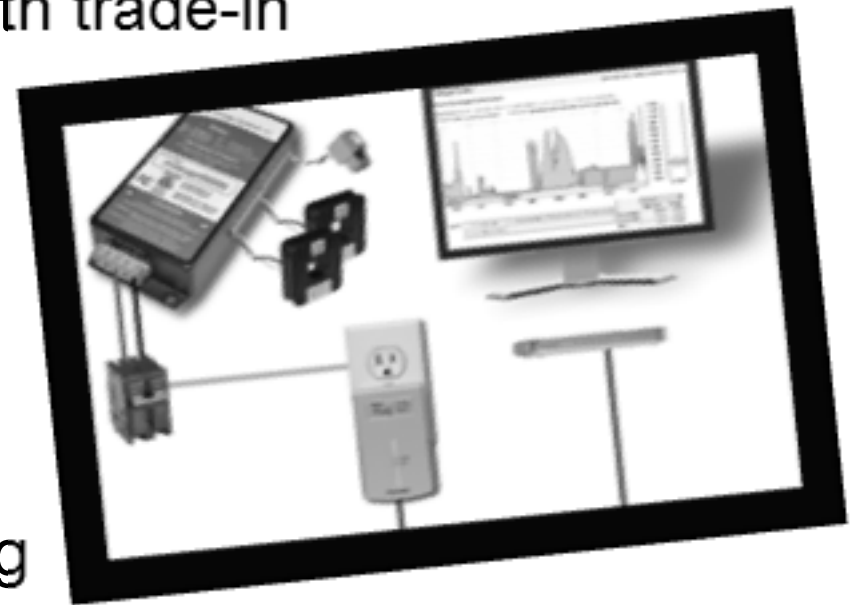
HIGHLIGHTS - CURRENT PROGRAM OFFERINGS - *RESIDENTIAL*

1. Solar Water Heating
 - Standard
 - Interest Loan Buy-down
 - Heat Pumps
2. Consumer ENERGY STAR CFLs
3. Consumer ENERGY STAR LEDs
4. VRF Split Systems
5. ENERGY STAR® Ceiling Fans
6. Whole House Fans
7. Solar Attic Fans

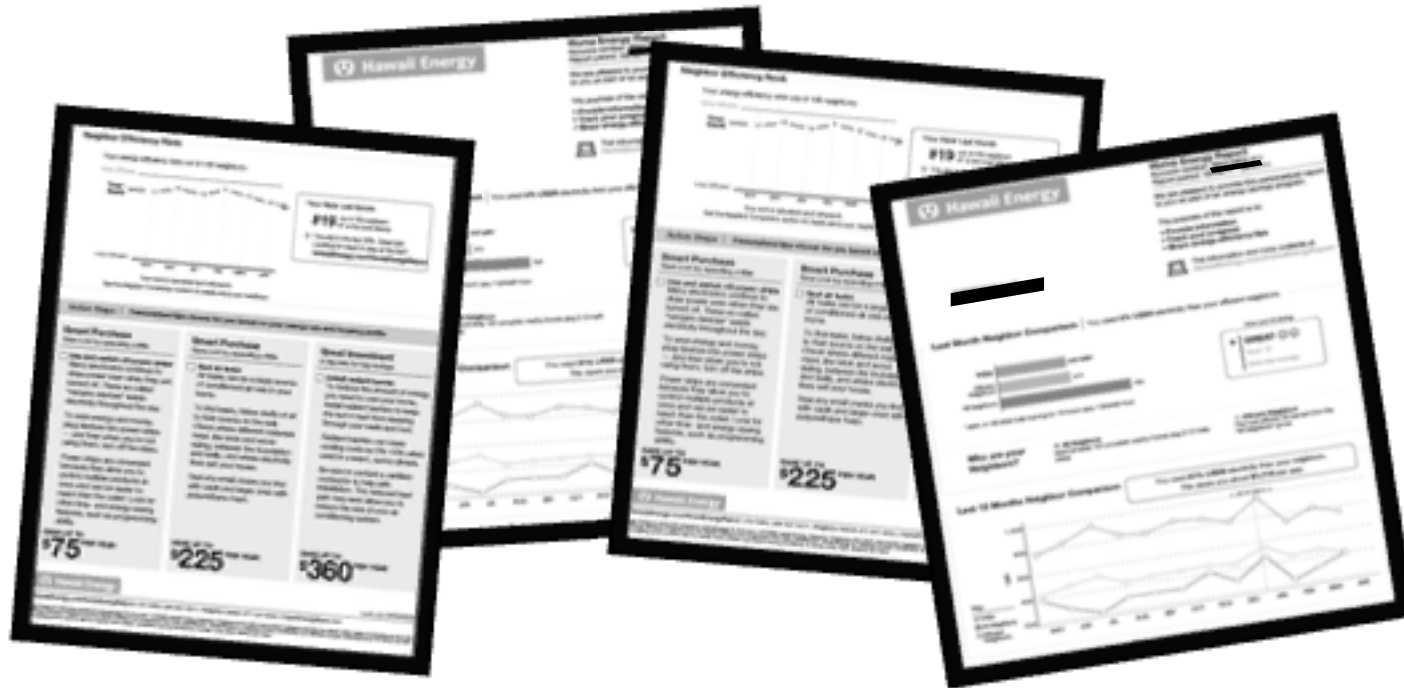


HIGHLIGHTS - CURRENT PROGRAM OFFERINGS - *RESIDENTIAL*

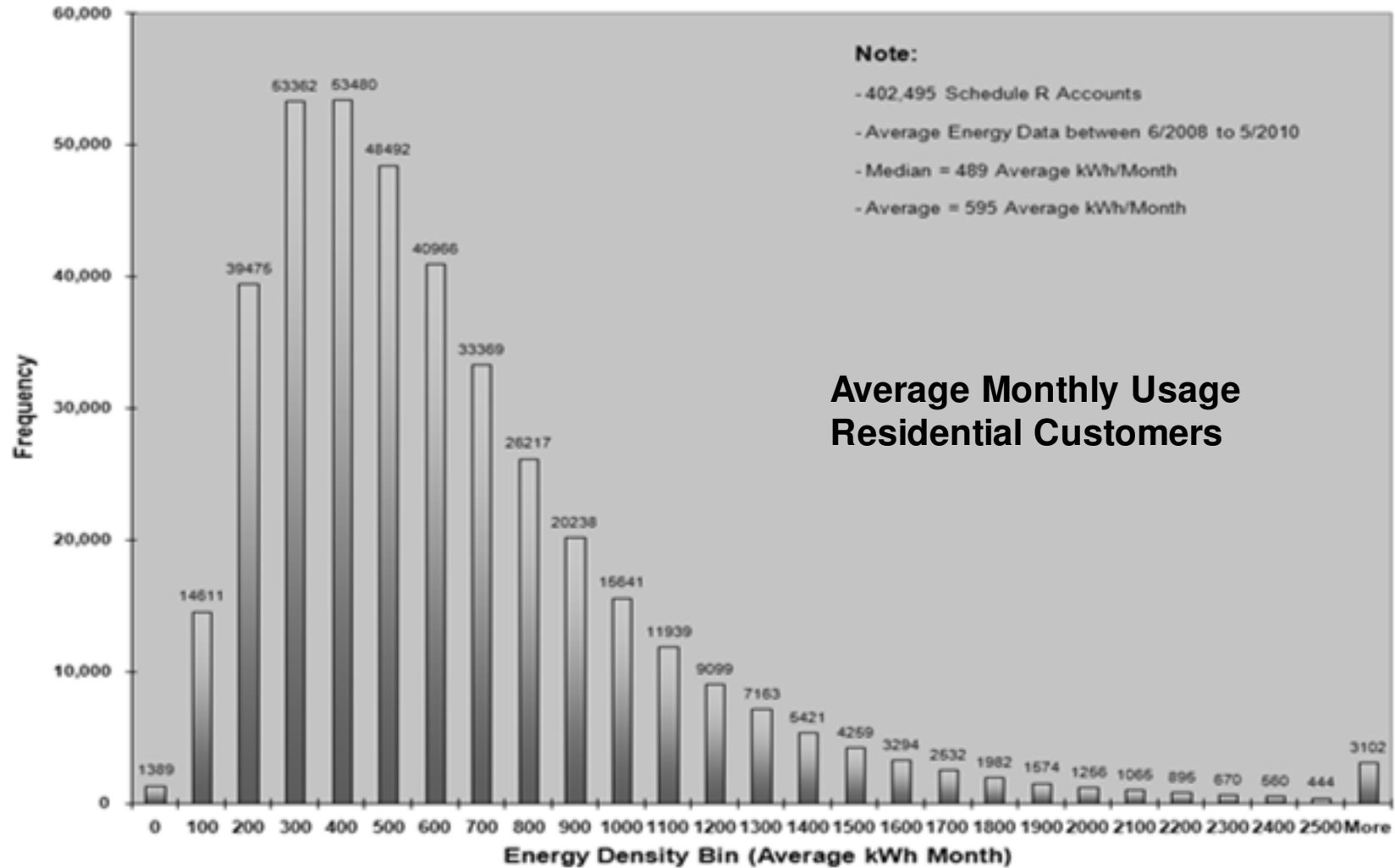
8. ENERGY STAR® Refrigerators
9. ENERGY STAR Refrigerator with trade-in
10. Refrigerator/Freezer Bounty
11. ENERGY STAR Washer (II/III)
12. VFD Pool Pump Controllers
13. Room Occupancy Sensors
14. Whole House Energy Monitoring
15. Split Incentives for Landlord / Renter



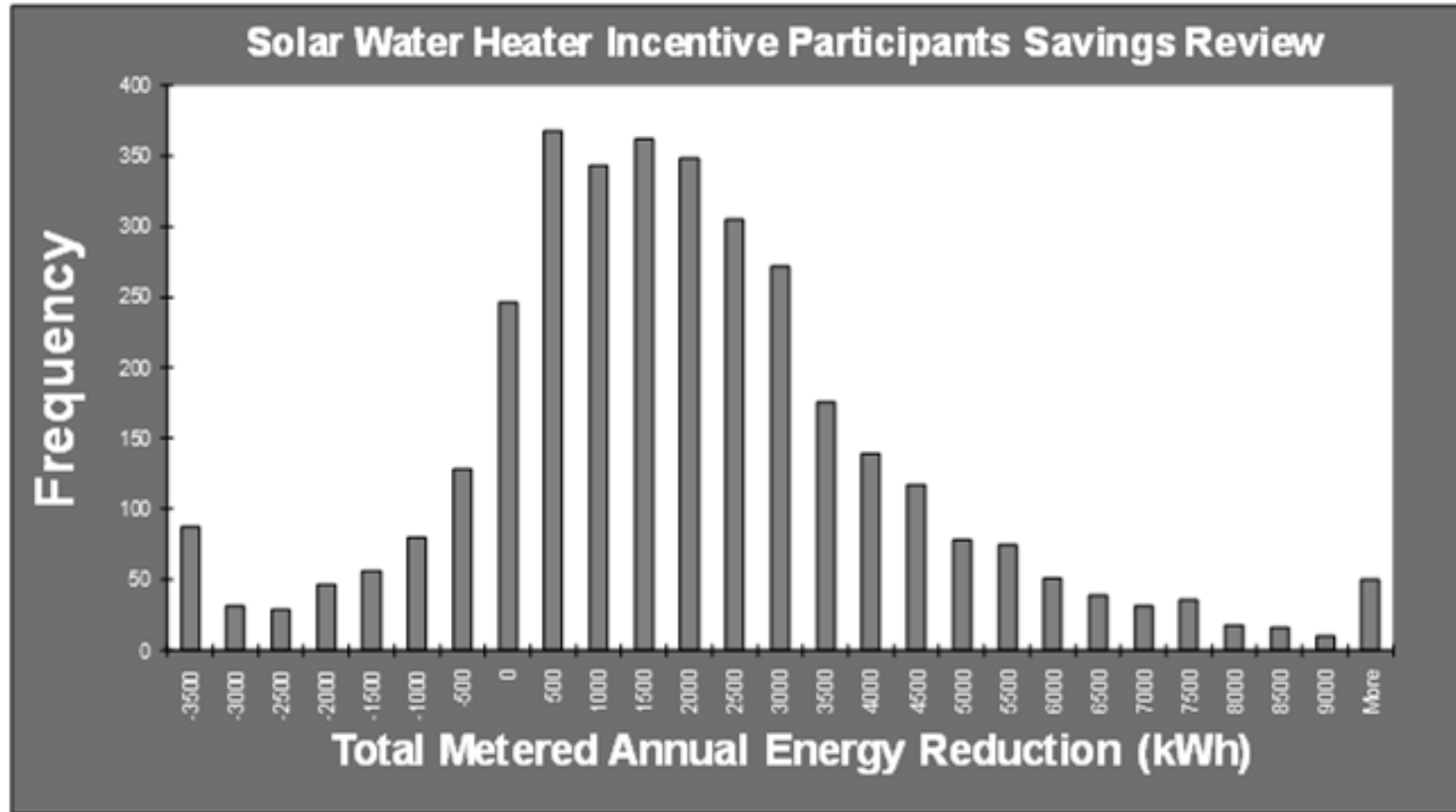
HIGHLIGHTS - PEER GROUP COMPARISON PROGRAM



HIGHLIGHTS - RESIDENTIAL TARGETING



HIGHLIGHTS - SOLAR WATER HEATING PROGRAM



HIGHLIGHTS - REFRIGERATOR PROGRAMS

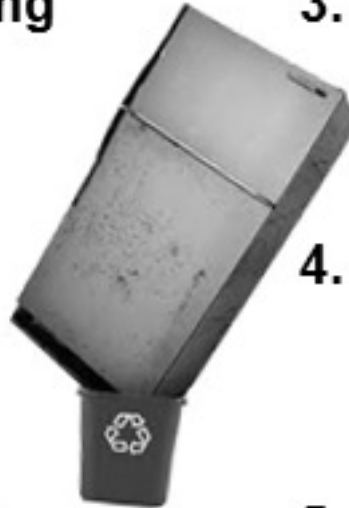
- **Landlord Specials (<\$600 Price Point)**
- **Refrigerators with Recycling**
- **Bounty Program**



HIGHLIGHTS - CURRENT PROGRAM OFFERINGS - BUSINESS

1. High Efficiency Lighting

- CFL
- T8
- LED
- Delamping
- Induction
- Pulse Start HID



2. High Efficiency HVAC

- Chillers
- VFD – Fan and Pump Applications
- Garage Ventilation Control
- Air-Cooled Packaged and Split Systems
- VRF Split Systems

3. High Efficiency Water Heating

- Commercial Solar Water Heating
- Heat Pumps

4. High Efficiency Water Pumping

- VFD Domestic Water Packages
- VFD Pool Pumps

5. High Efficiency Motors

- CEE Listed Premium Motors

6. Commercial Industrial Processes

- Waste Water Process
- Air Compressors
- Commercial Kitchen Equipment
- CO2 Monitors

HIGHLIGHTS - CURRENT PROGRAM OFFERINGS - BUSINESS

7. Energy Star Business Equipment

- Refrigerators with Recycling

8. Energy Awareness, Measurement and Control Systems

- Condominium Submetering
- Small Business Submetering

9. Customized Project Measures

- Cost per kWh and kW Savings Program

10. Building Envelope Improvements

- Window Tinting
- Cool Roof Technologies

11. Business Direct Lighting Installation

- Small Business Direct Lighting Install

12. Business Design, Audits, and Commissioning

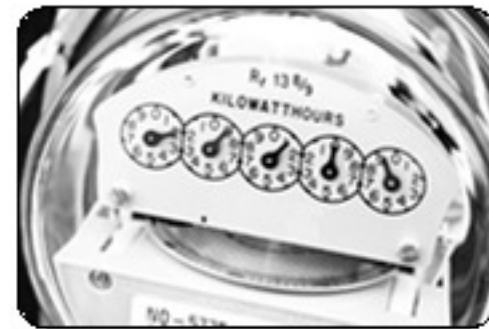
- Central Plant Optimization
- Energy Study & Design Assistance
- Energy Project Catalyst
- Technology and Project Demonstration

13. Energy Efficiency Equipment Grants

- Community and Grassroots Support
- Small Business Direct Installation
- Water Cooler Timers

HIGHLIGHTS - **MASTER METERED PROGRAMS**

- **Incentives and education for the installation of billing submeters**
- **AOAO Residents and Business Tenants within a master metered facility.**
- **Motivation and ability to directly benefit from energy efficiency improvements and behaviors.**

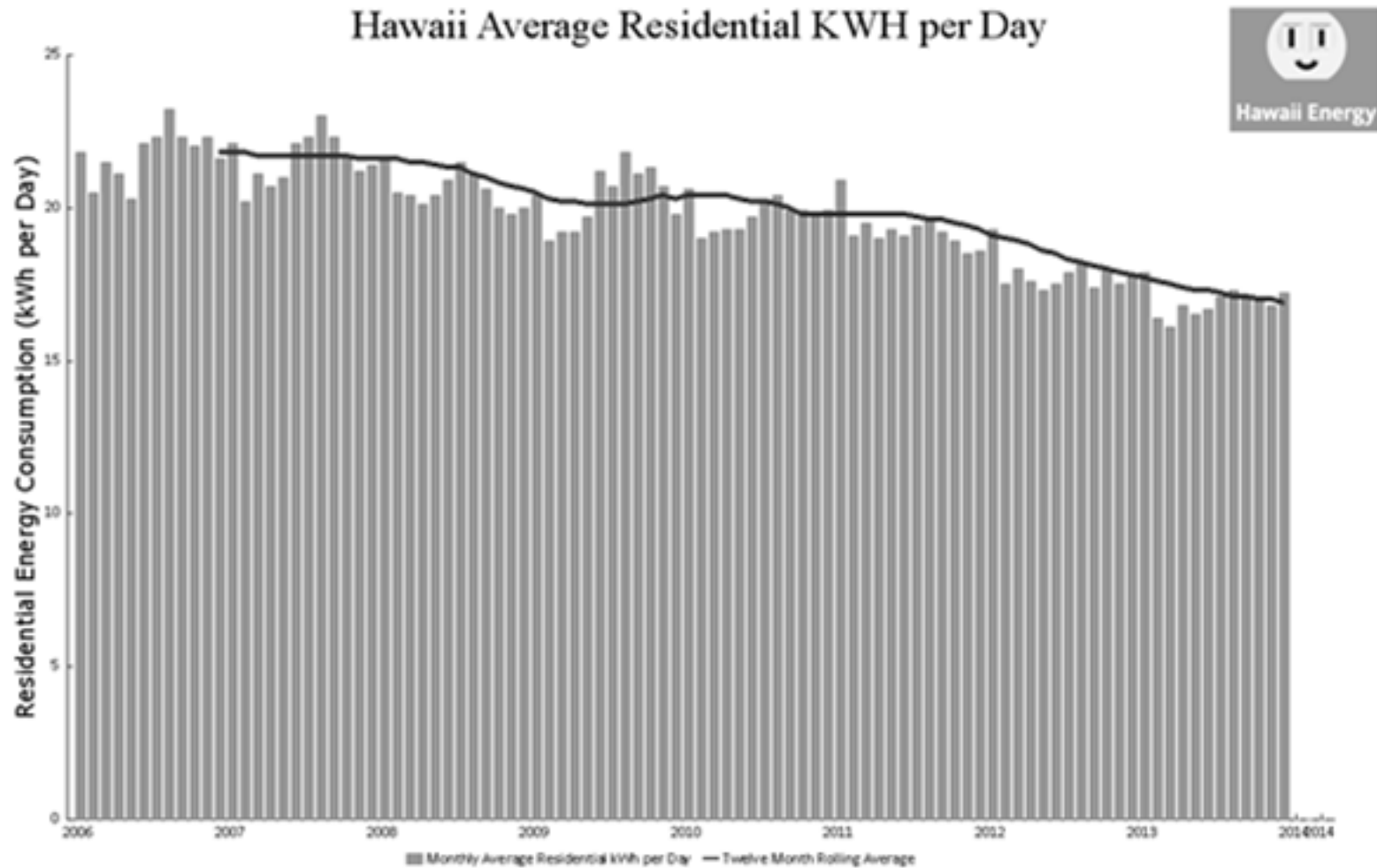


HIGHLIGHTS - CURRENT PROGRAM OFFERINGS - TRANSFORMATIONAL

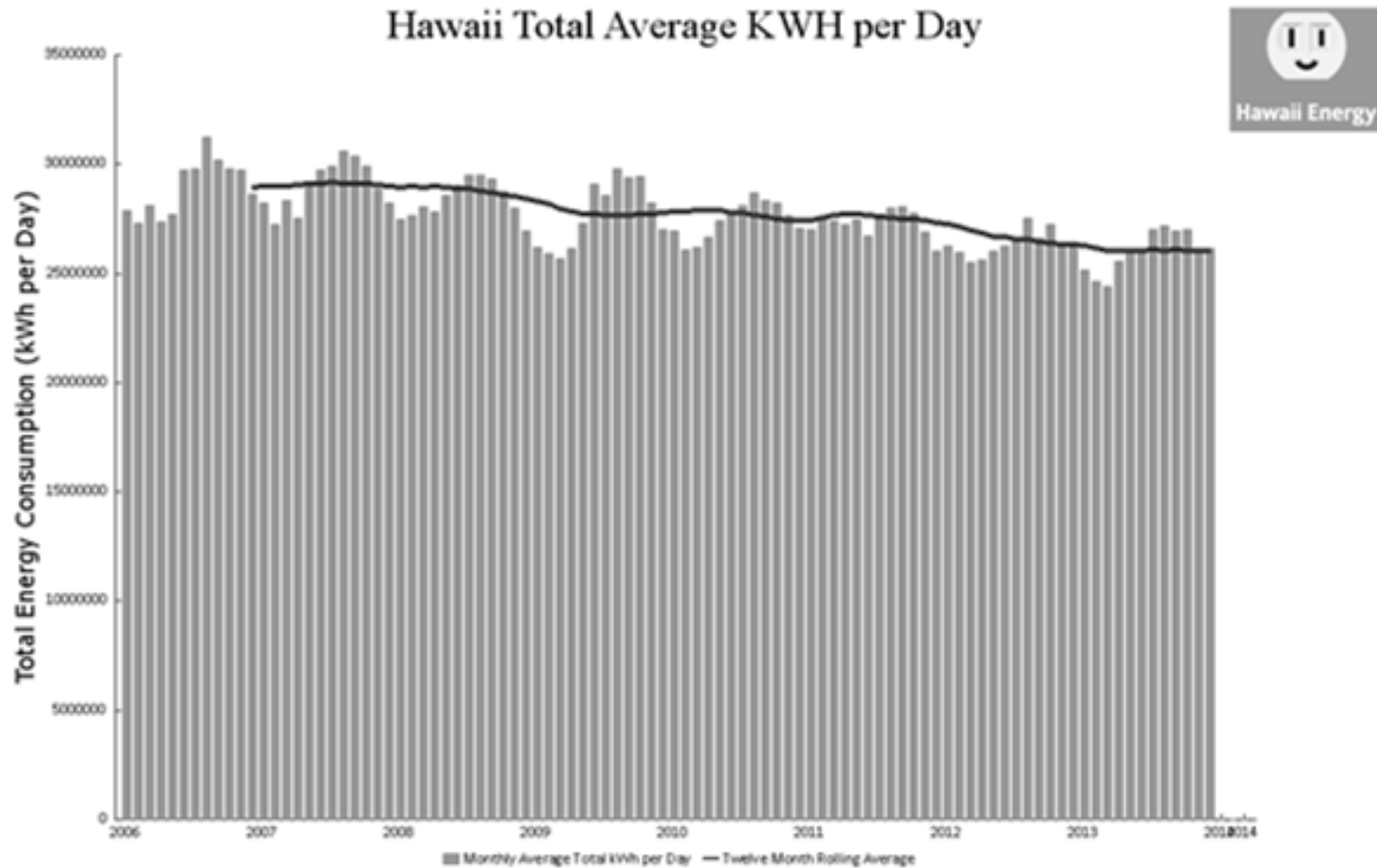
- **Transformational Project Plan(s)**
 - **Secondary Education Energy Efficiency Project(s)**
 - Teacher Development (NEED.org, MEDB Island Energy Inquiry*)
 - Pahoia High & Intermediate School
 - Ma Ka Hana Ka Ike
 - **Workforce Development**
 - EEFG – Energizing Efficiency™ Courses
 - CEM – Certified Energy Management Courses
 - BOC – Building Operator Certification Courses
 - KUPU – RISE – Rewarding Internships for Sustainable Employment
 - UH Manoa, Hawaii Pacific University – Kukui Cup
 - **Energy Efficiency Service Sector Career Fair**
 - **NetZero Home “Documentary”**
 - **Energy Efficiency through Financial Literacy**
 - **Analysis, Metrics, Reporting**



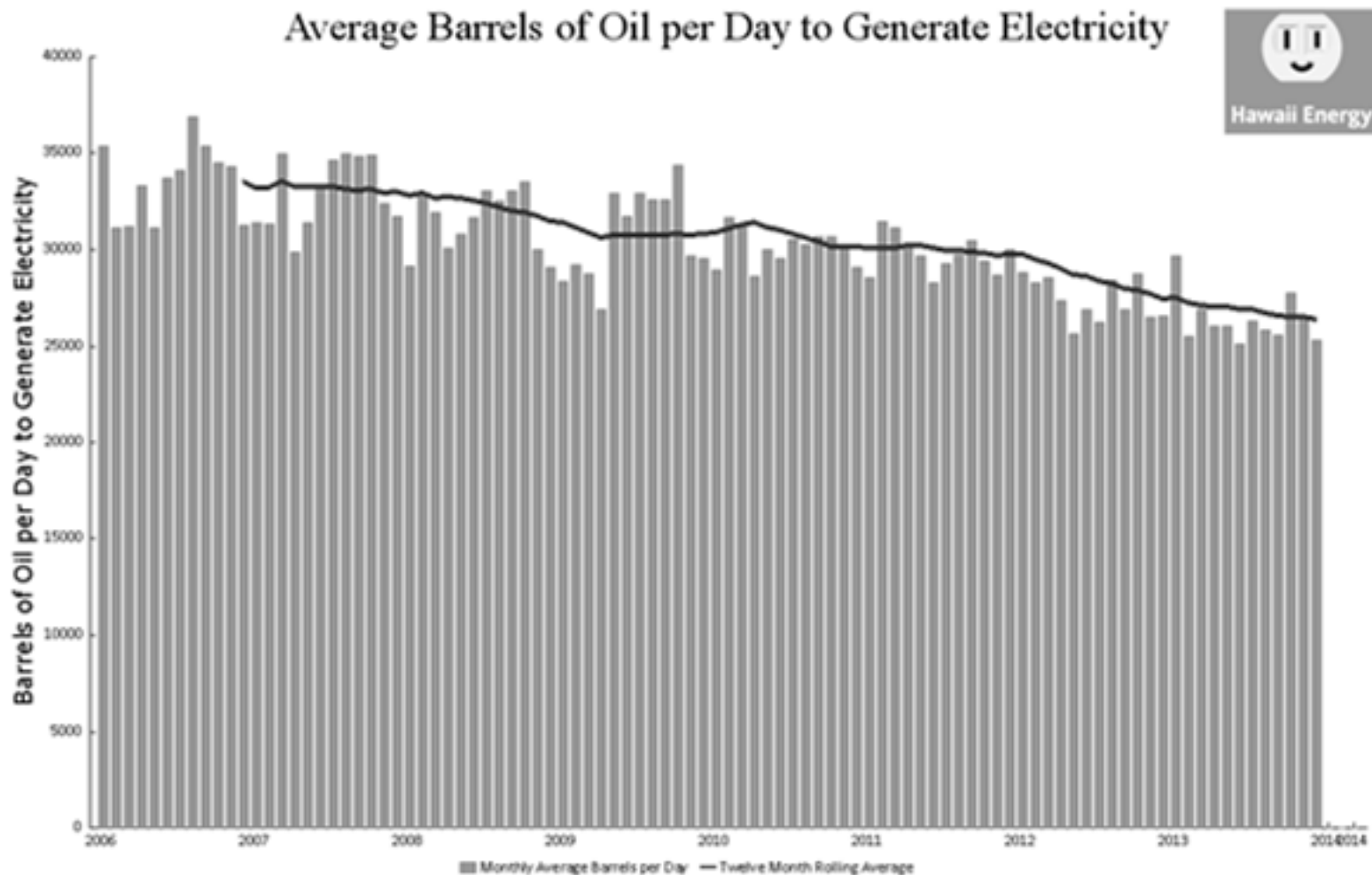
RESULTS: HAWAII AVERAGE RESIDENTIAL KWH PER DAY



RESULTS: HAWAII TOTAL AVERAGE KWH PER DAY



RESULTS: AVERAGE BARRELS OF OIL PER DAY TO GENERATE ELECTRICITY



FUTURE OF PROGRAM

- HRS §269-121 (b) The public benefits fee shall be used to **support clean energy technology, demand response technology, and energy use reduction, and demand-side management infrastructure, programs, and services**, subject to the review and approval of the public utilities commission. . .

FUTURE OF PROGRAM

PBFA future vision: *to enable utility customers*

*to become interactive participants in a
dynamic and diversified smart utility grid
that provides coordinated and responsive
distributed generation, demand response
and energy storage support , with
conservation and efficiency
at the core of the effort*

PBFA LONG RANGE VISION #1 - AGGREGATE

Aggregate State Energy Efficiency Efforts

through partnering with existing and new clean energy programs

1-Stop for Efficiency Programs

- Electric
- Water
- Gas
- Transportation
- Financing (On-Bill)
- Education and training
- Codes and standards
- Market transformation
- Behavior change

Clean Energy Stakeholders

- Customers
- Service providers
- Community allies
- Utilities (including KIUC)
- Research organizations
- Government agencies
- Educational institutions
- PUC

PBFA LONG RANGE VISION #2 - FACILITATE

Facilitate Strategic Energy Management (Deep Dive)

- **Offer decision-maker education and support**
 - Education, training and certification
 - Identify facility needs, utility costs and opportunities
 - Address technical and “non-technical” barriers
 - Ensure availability of best-in-class efficiency programs
- **Provide decision data and advice**
 - Benchmarking / submetering / peer group comparisons
 - Energy project facilitation and support
 - Real-time monitoring, analysis and alarms
 - Cost sharing for Energy Managers

PBFA LONG RANGE VISION #3 - INTEGRATE

Integrate Energy Efficiency with other Clean Energy

- Partner with utility in transforming to a truly smart grid
- Make efficiency a nimble, dispatchable grid resource
- Enhance grid tolerance for expanded renewable energy
- Improve customer load management for utility targeted circuits
- Develop strategy, equipment, protocols for DG, DR and storage
- Combine storage/EV/smart grid with active load management
- Assist in development of attractive TOU and real-time rates
- Coordinate EEPS and RPS evolution

Top Five Things You Can Do

1. Install efficient lighting (CFL and LED)
2. Install solar water heating and *ENERGY STAR* appliances
3. Install and maintain high efficiency cooling – where needed
4. Don't waste energy - change your behavior
5. Get personally involved with the clean energy effort

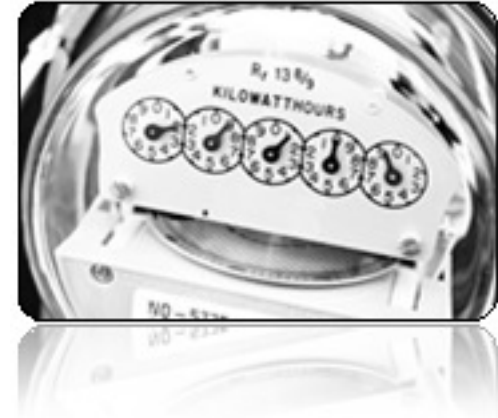


Get personally involved . . .



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