APEC Workshop on Recent Advances in Utility Based Financial Mechanisms that Support

Renewable Energy and Energy Efficiency

Honolulu, Hawaii

March 30, 2009

REGULATOR'S PERSPECTIVE

ON

RENEWABLE ENERGY PORTFOLIO STANDARDS

AND

ENERGY EFFICIENCY

Carlito P. Caliboso

Chairman

Public Utilities Commission

State of Hawaii

Background
Regulatory Authority

- *General supervisory power over public utilities under Chapter 269, HRS. HRS §269-6(a).*

- *"The public utilities commission may consider the need for increased renewable energy use in exercising its authority under this chapter." HRS §269-6(b). Act 177 (SLH 2007).*

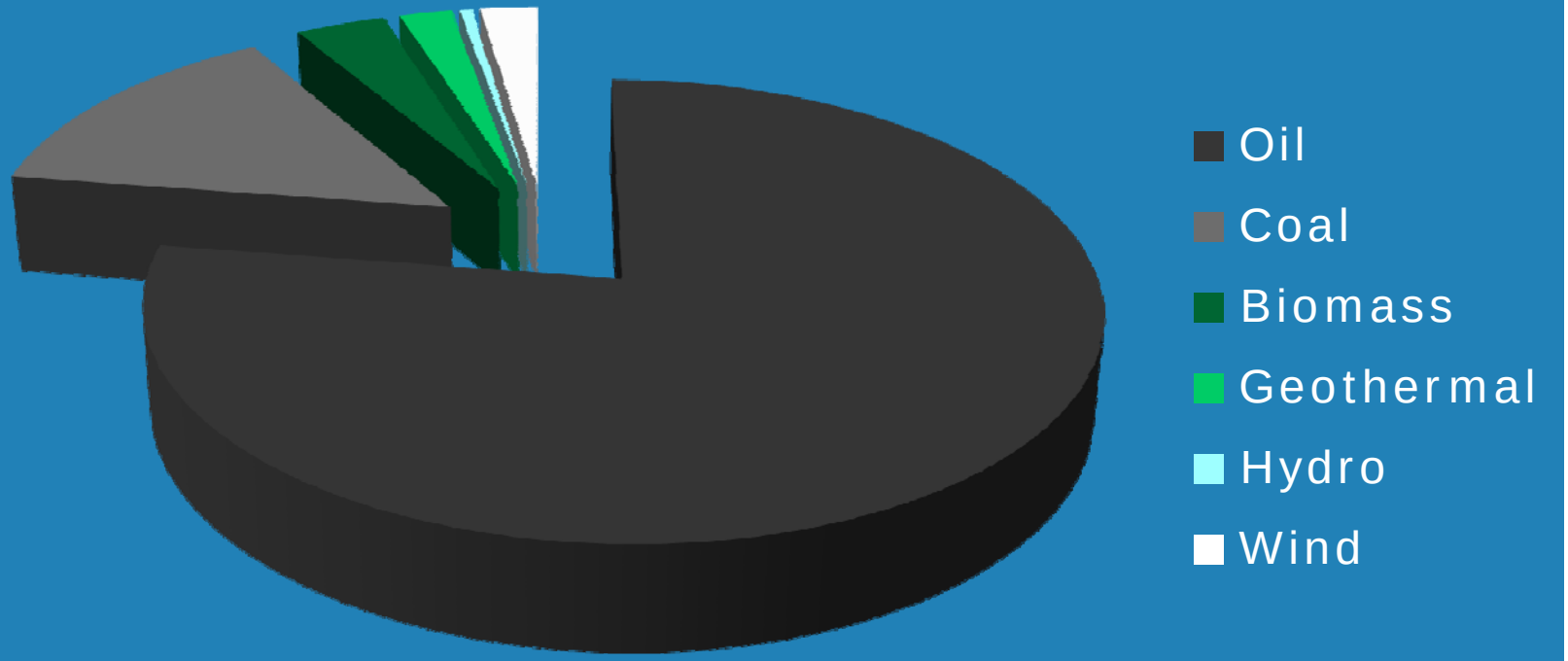
Traditional Regulatory Objectives, Ch. 269 HRS

- *Reliable Electricity Service*
- *Just and Reasonable Rates*
- *Fair Opportunity to Earn Reasonable Rate of Return*

Balancing Traditional Regulatory Objectives

Hawaii's Dependence on Oil
Hawaii Fuel Mix

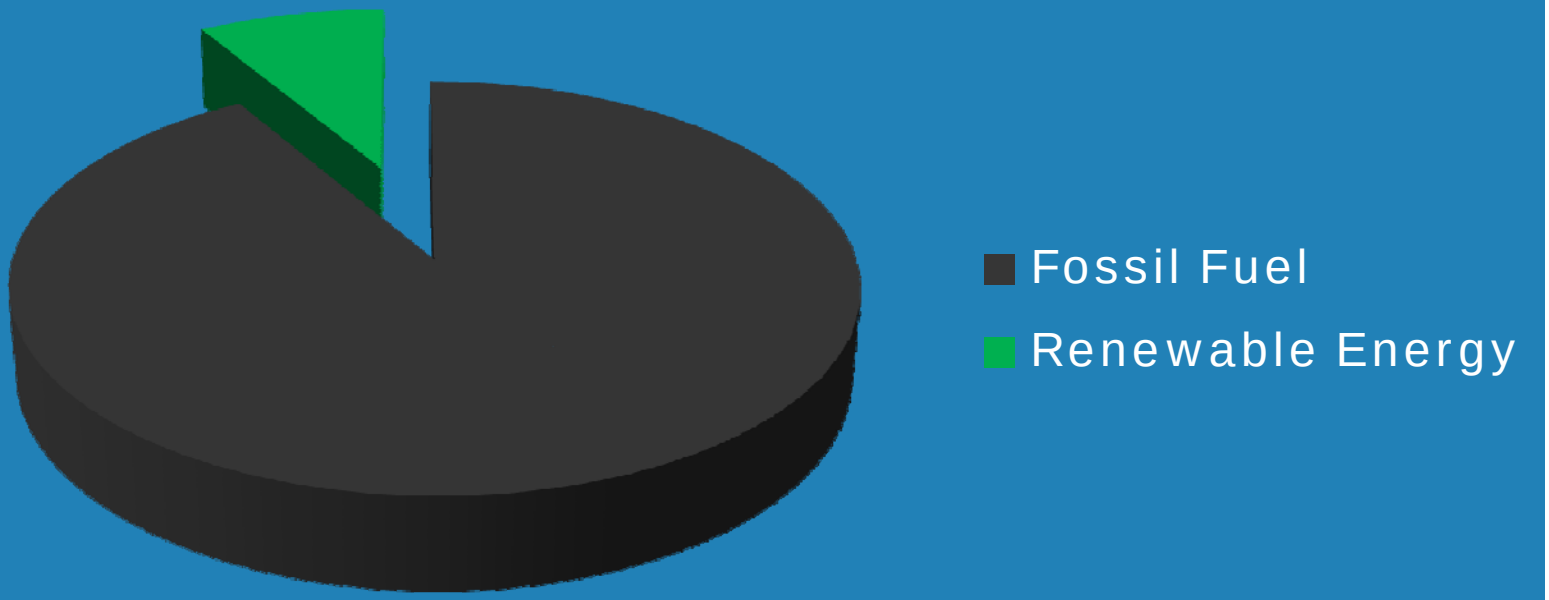
Percent of Fuel Used for Electricity Generation by HECO in 2007



Data Source: www.heco.com

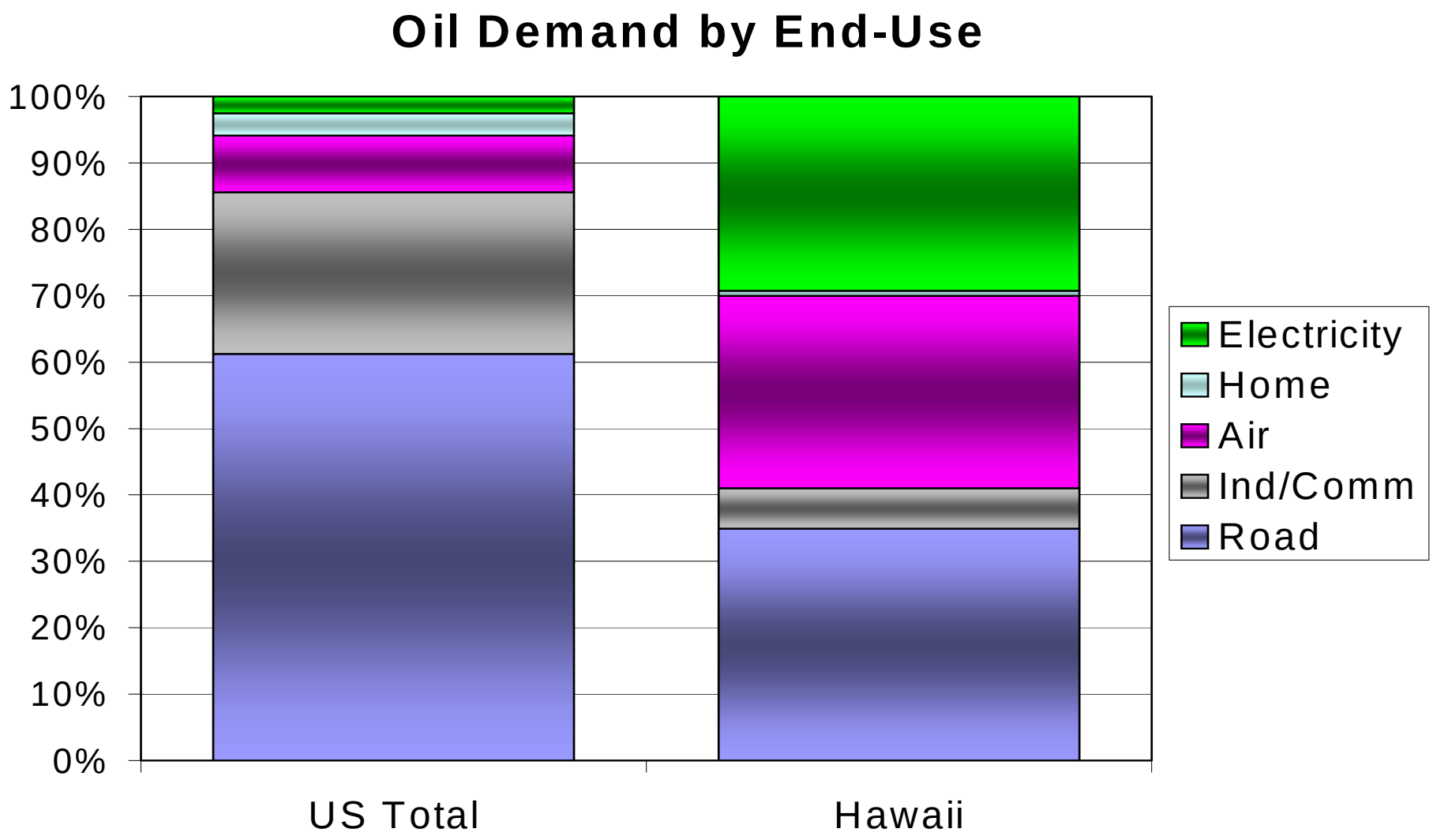
Hawaii's Fossil Fuel Dependence

Percent of Fossil Fuel and Renewable Energy Used in Electricity Generation
2007



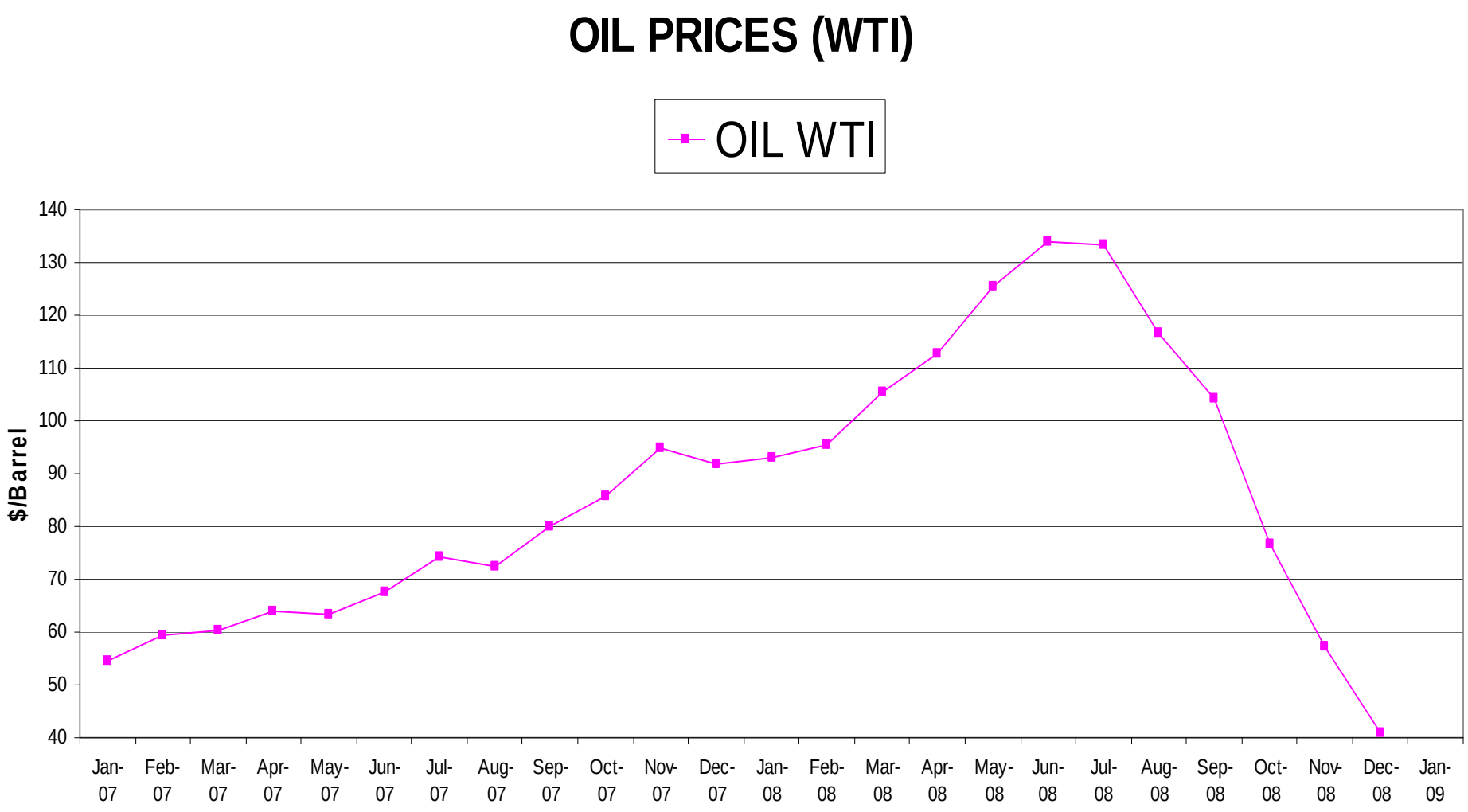
Data Source: www.heco.com

Comparison of US and Hawaii Oil Demand



Source: HNEI

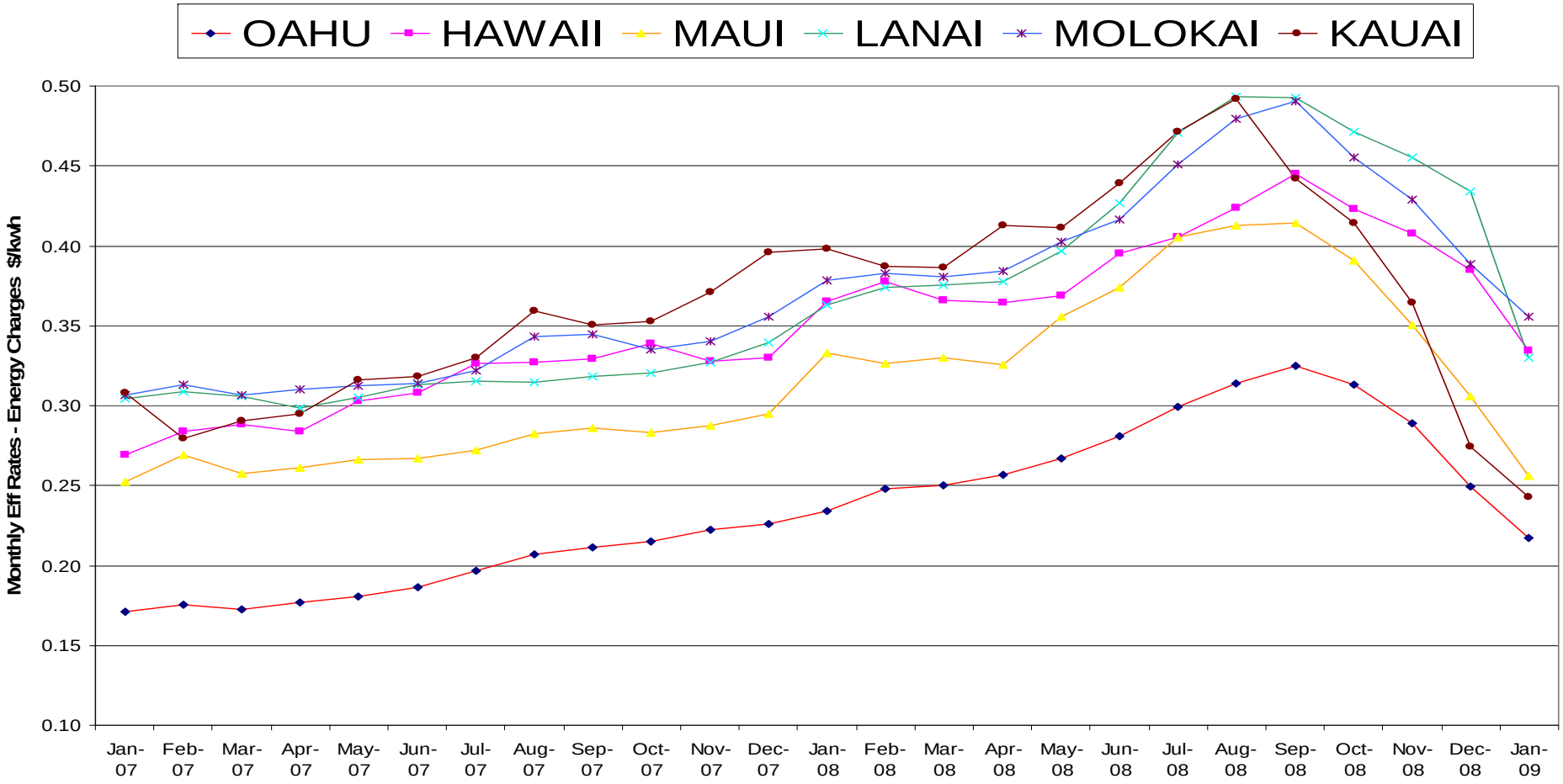
Oil Price Volatility



Data Source: U.S. DOE Energy Information Administration
http://tonto.eia.doe.gov/dnav/pet/pet_pri_spt_s1_m.htm

Vulnerability to Oil Price Volatility

EFFECTIVE RATES

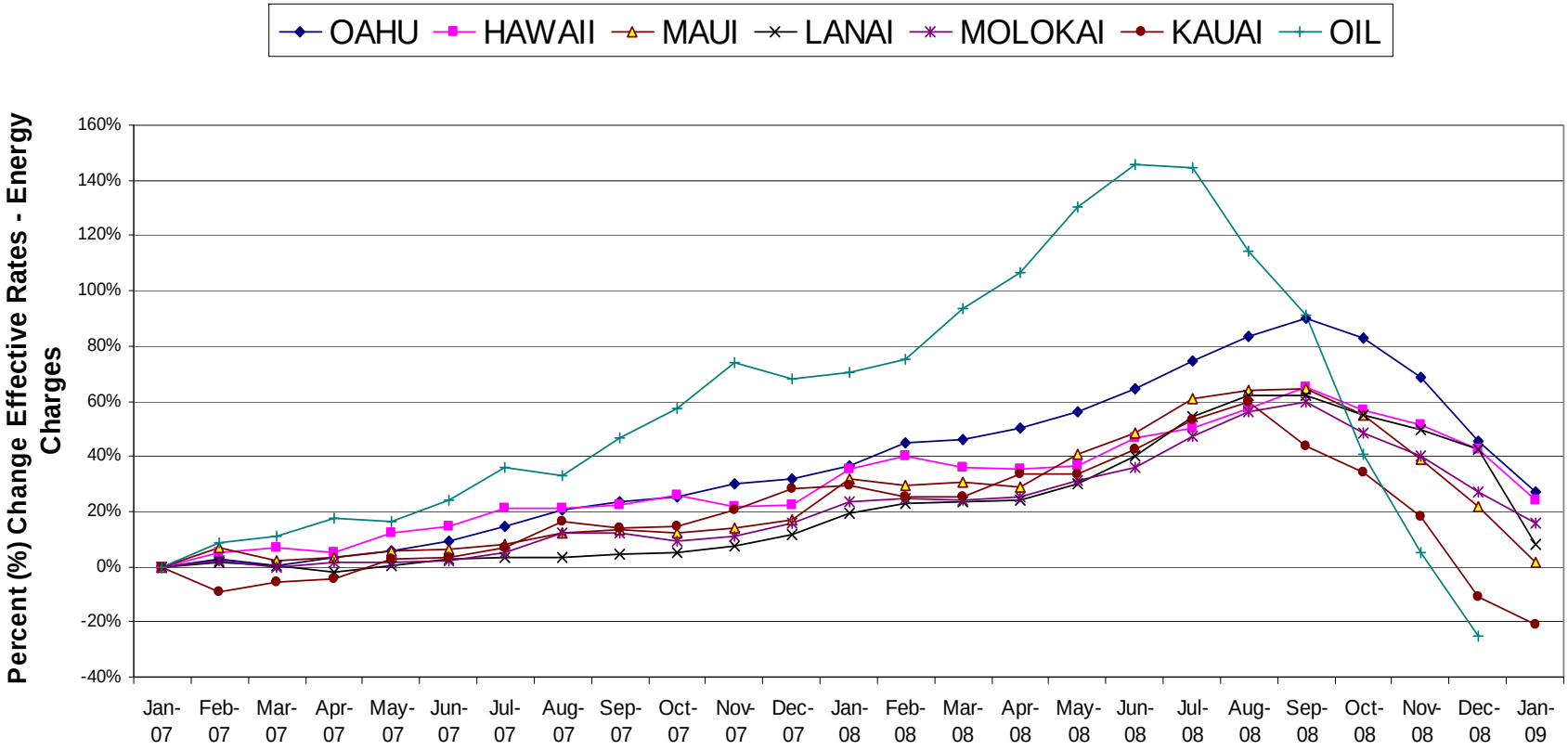


Data Source: HECO Companies' "Effective Rate Summaries" Reports
KIUC Fuel and Purchased Power Rate Adjustment Reports

Vulnerability to Oil Price Volatility

EFFECTIVE RATES AND OIL PRICE CHANGES

SINCE JANUARY 1, 2007



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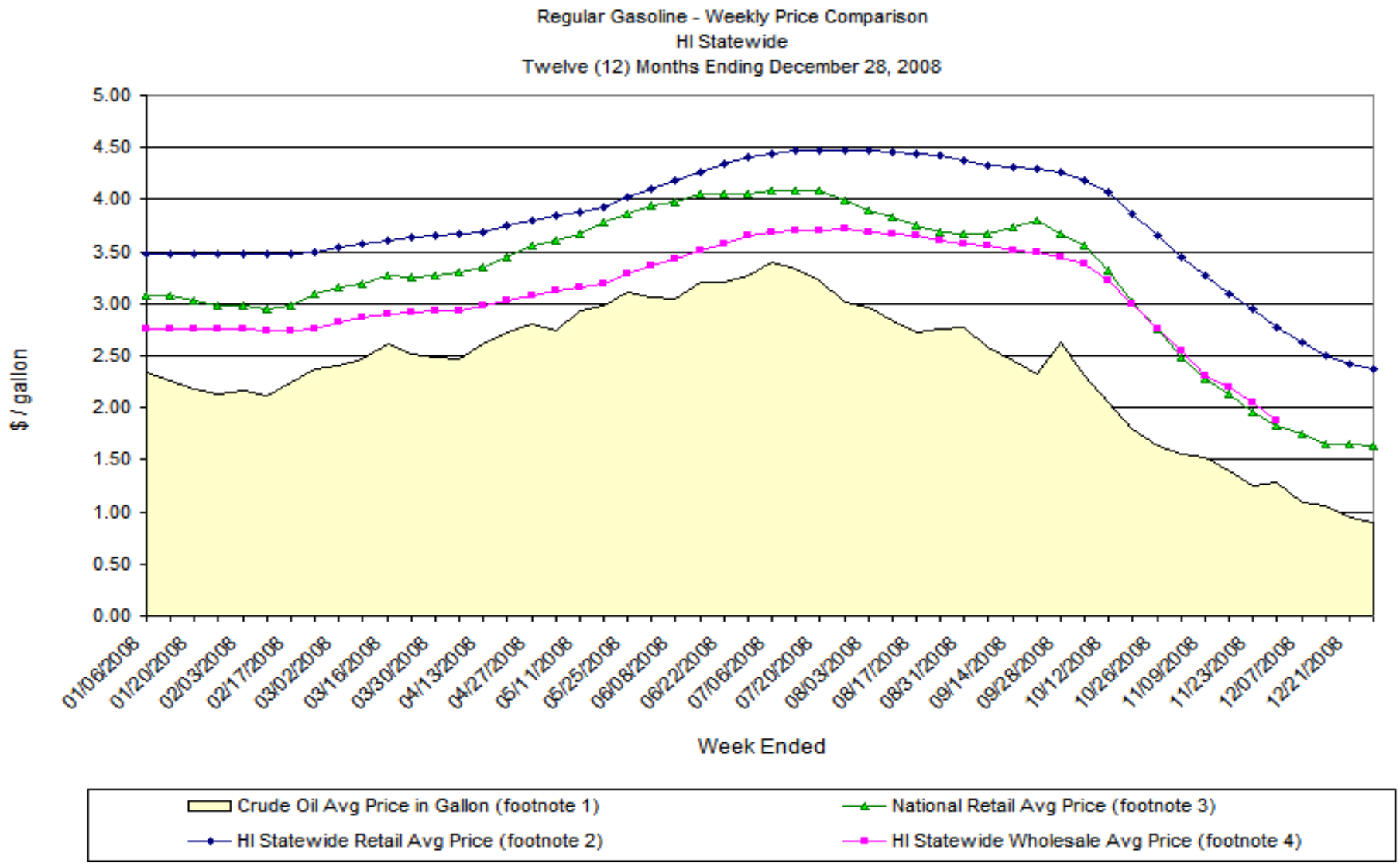
Vulnerability to Oil Price Volatility



Price of Oil Since 1980s

Climate Change
(Global Warming)

Priority Policy and Regulatory Objectives

- *Energy Security*
  - *Reduce Imported Oil Dependence*
  - *Price Stability*
  - *Supply Security*
- *Climate Change (Global Warming)*
  - *Reduce Green House Gas Emissions*
  - *Reduce Fossil Fuel Use*

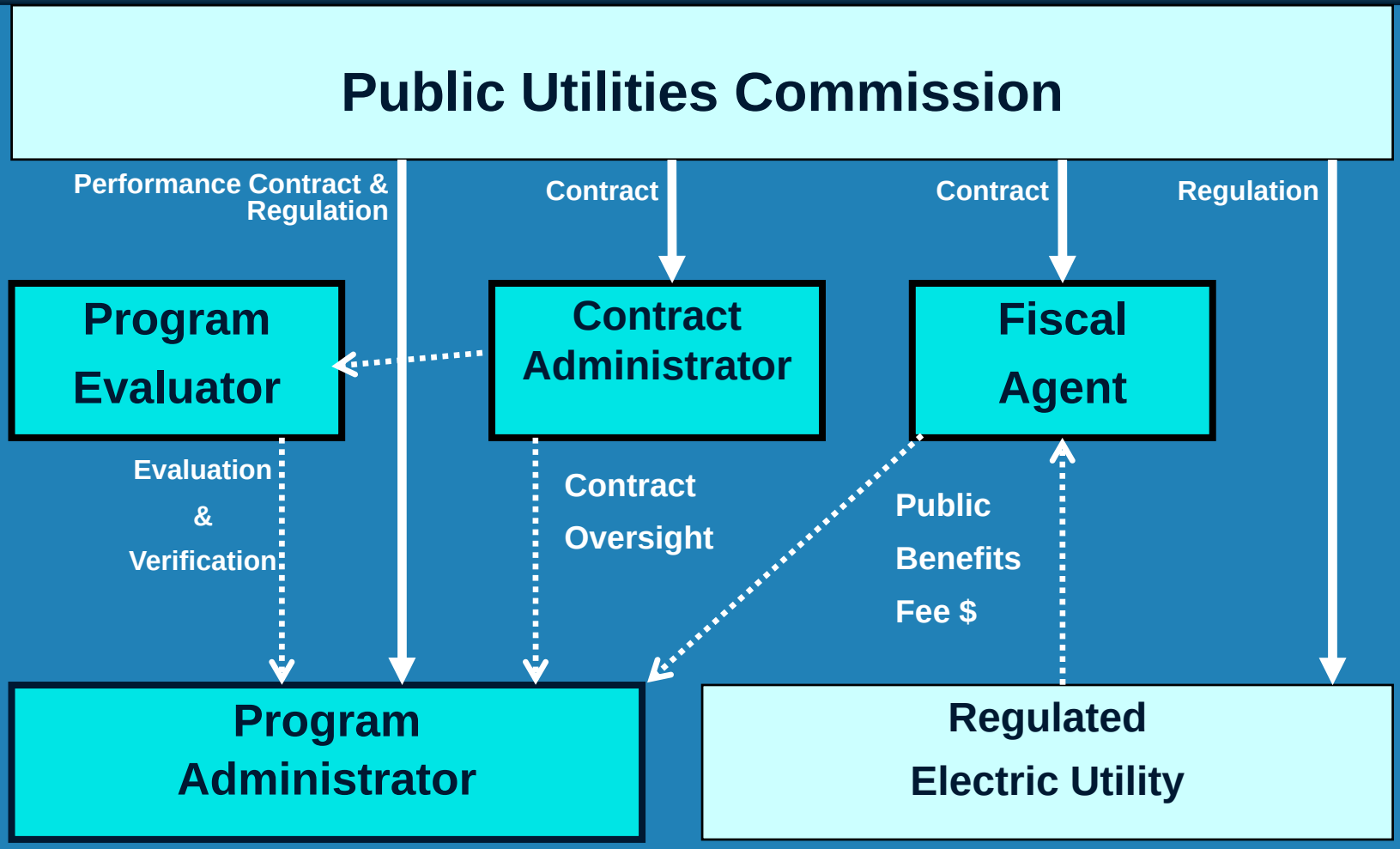
Primary Energy Strategies

- *Energy Efficiency:*
  - *Maximize Cost-Effective Energy Efficiency Programs*
- *Increase Renewable Energy Generation*
  - *Wind*
  - *Solar*
  - *Geothermal*
  - *Wave, OTEC, Biofuels, & Others*

Maximize Energy Efficiency Aggressively

- *2004 HECO Rate Case 04-0113 DSM Application Bifurcated*
- *Energy Efficiency Docket 05-0069*
- *Public Benefits Fee, Act 162 (2006) , HRS §269-121.*
- *Energy Efficiency Program Administrator Docket 2007-323*

Hawaii Energy Efficiency Program Administrator July 1, 2009

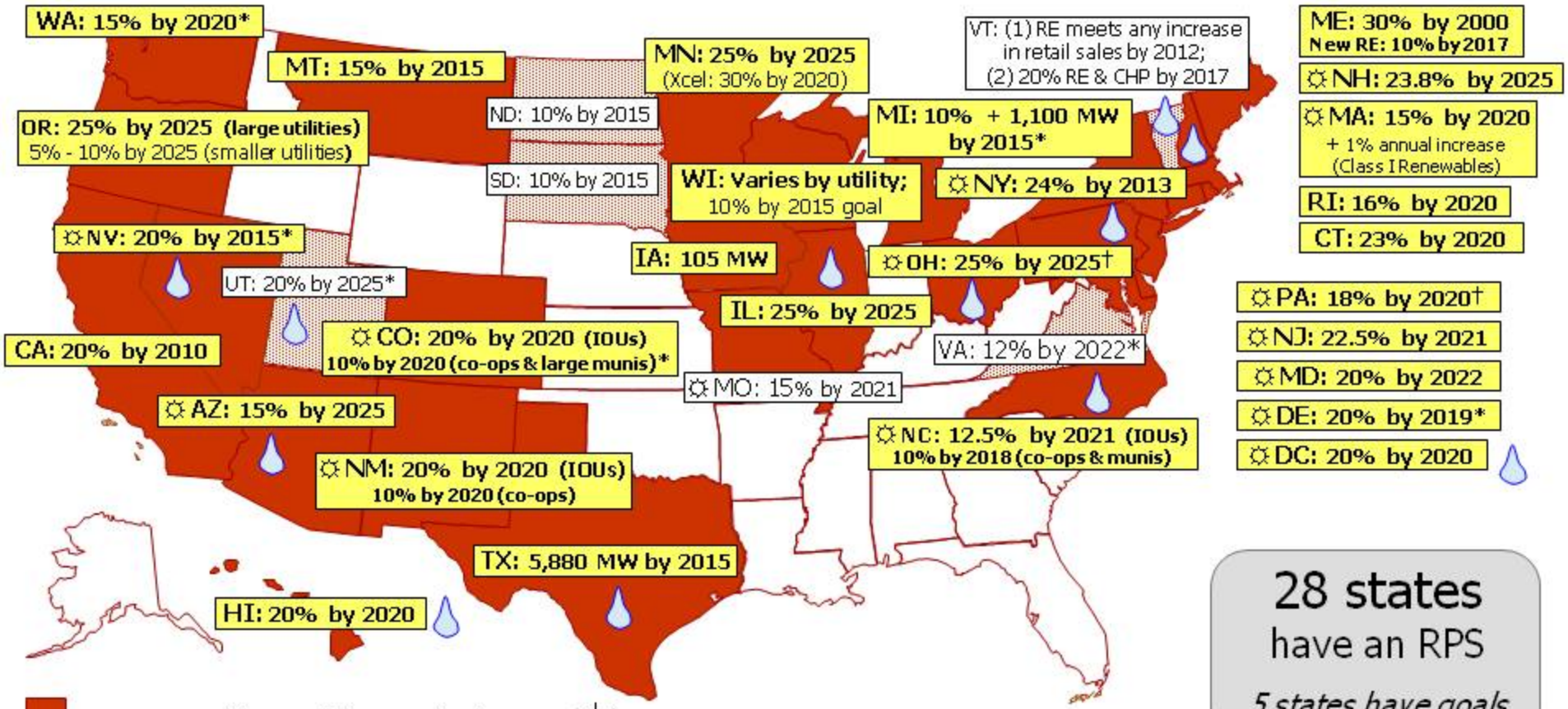


Establishing Energy Policy to Increase RE Generation

- *Renewable Portfolio Standards*
  - *Standards*
  - *Goals*
- *Broad Policy Tool (Weapon)*
  - *Requires % of RE Generation*
  - *Communicates Policy to Change*

Renewable Portfolio Standards

www.dsireusa.org / March 2009

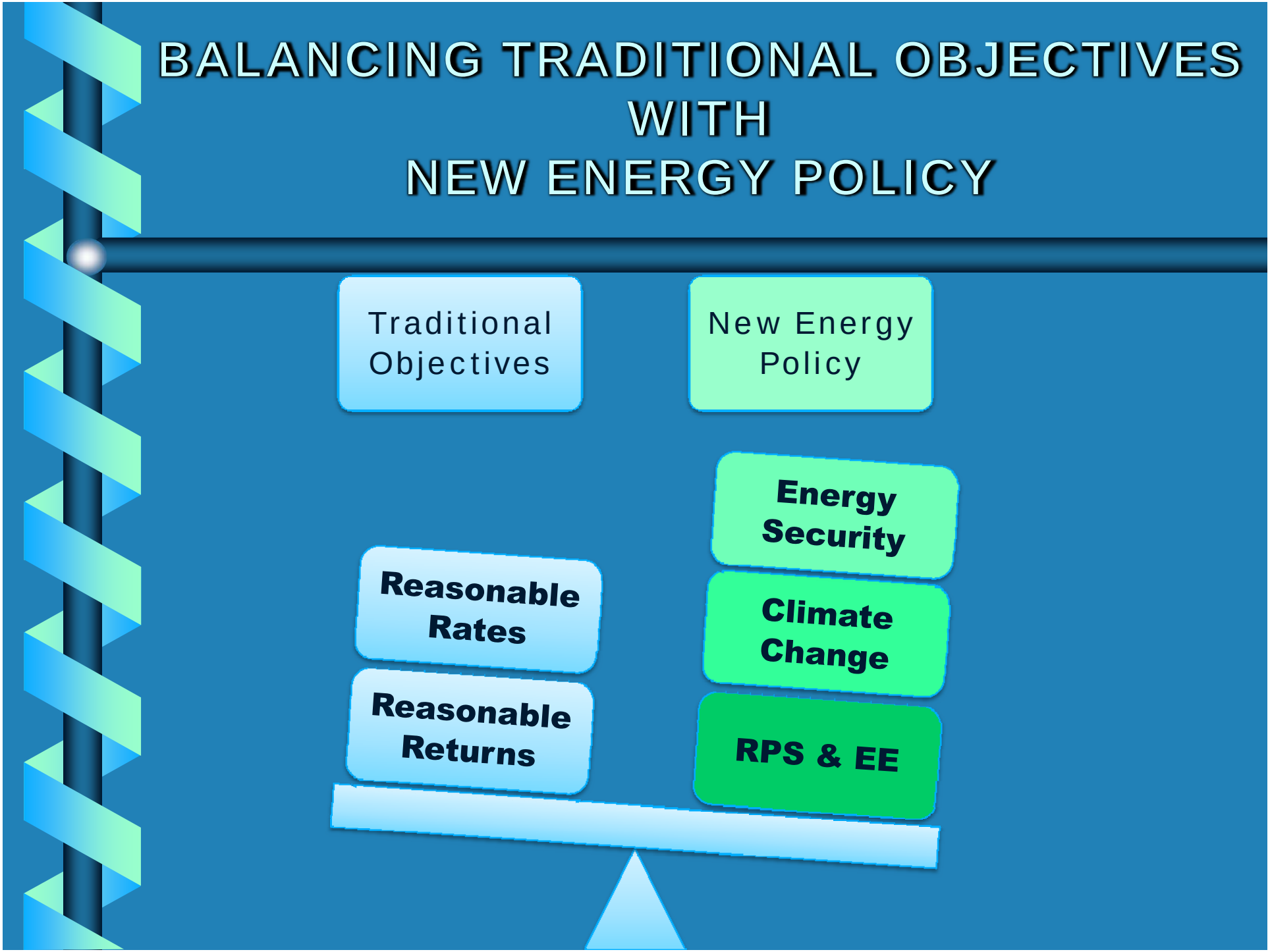


Establishing Policy to Increase RE Generation: RPS

- *RPS (includes EE), HRS §269-92*
  - *10% Renewable Energy by 2010*
  - *15% Renewable Energy by 2015*
  - *20% Renewable Energy by 2020*

- *Penalties Established for RPS at $20 per MWh of deficiency. (Order 12/19/2008 Docket 2007-0008)*

BALANCING TRADITIONAL OBJECTIVES WITH NEW ENERGY POLICY




Kaheawa Wind
Maui


Kaheawa Wind
Maui
03/11/2009

Hawi Wind
Big Island

Hawi Wind
Big Island


La Ola Solar Farm
Lanai
03/13/2009

La Ola Solar Farm
Lanai

La Ola Solar Farm
Lanai

Renewable Energy Progress
Others on the Horizon

- *Sea Water Air Conditioning*
- *Ocean Thermal Energy Conversion (OTEC)*
- *Biomass*
- *Biofuels*
- *Wave*
- *Others TBA*

ALOHA