



# **ACT 234**

## **Hawaii's**

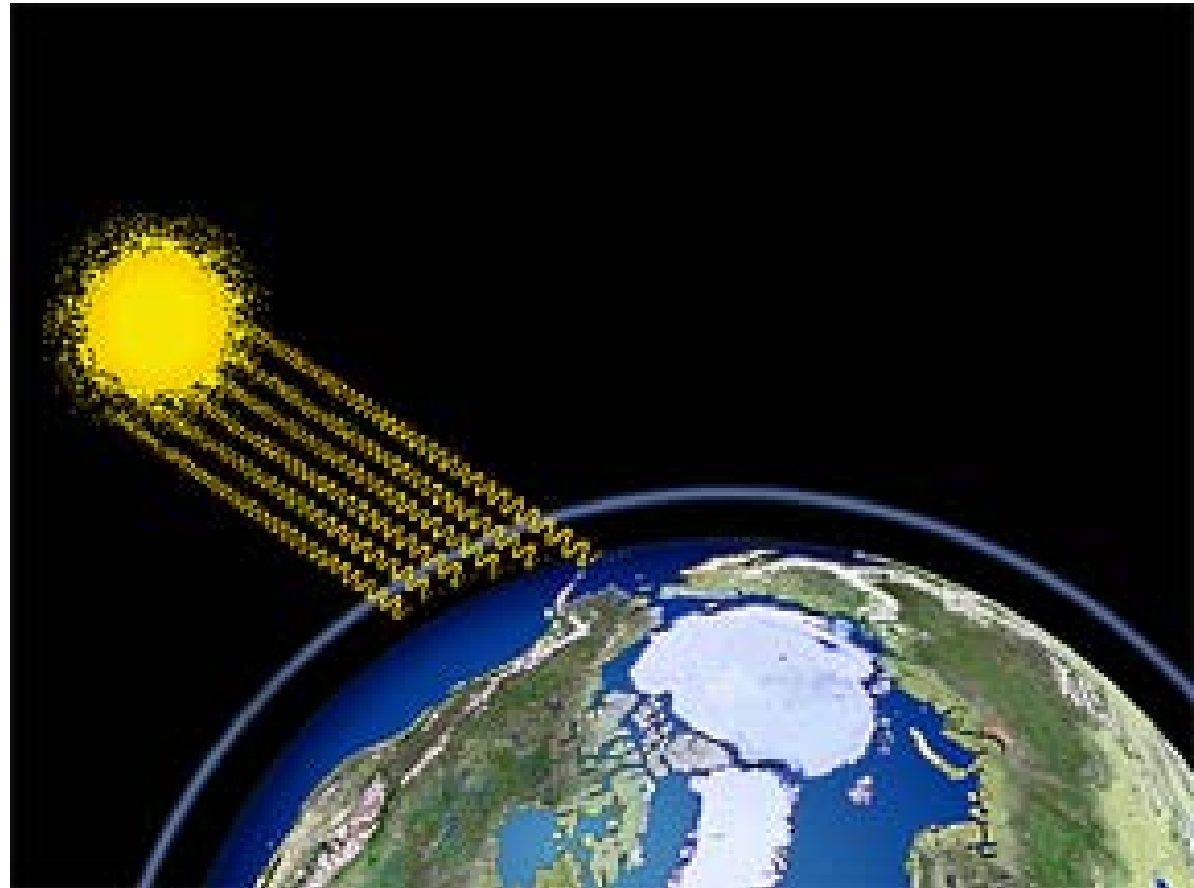
### **Global Warming Solutions Law**

**GHG Emissions Inventory and  
Activities of the Task Force**

*Laurence K. Lau,  
Deputy Dir., State Department of Health*

**Greenhouse gases act like glass panes in a greenhouse, trapping heat from the sun and holding it in the atmosphere. As the level of greenhouse gases rises, the extra warming causes increasing problems.**

- **Global warming**
- **Climate change**



## **Greenhouse Gases:**

**Carbon Dioxide (CO<sub>2</sub>): gasoline and electric power**

**Methane (CH<sub>4</sub>): landfills & livestock**

**Nitrous Oxide (N<sub>2</sub>O): fossil fuel & biomass burning, fertilizer use**



**Others:**

**Perfluorocarbons (PFC),  
Hydrofluorocarbons (HFC),  
Sulfur Hexafluoride (SF<sub>6</sub>)**

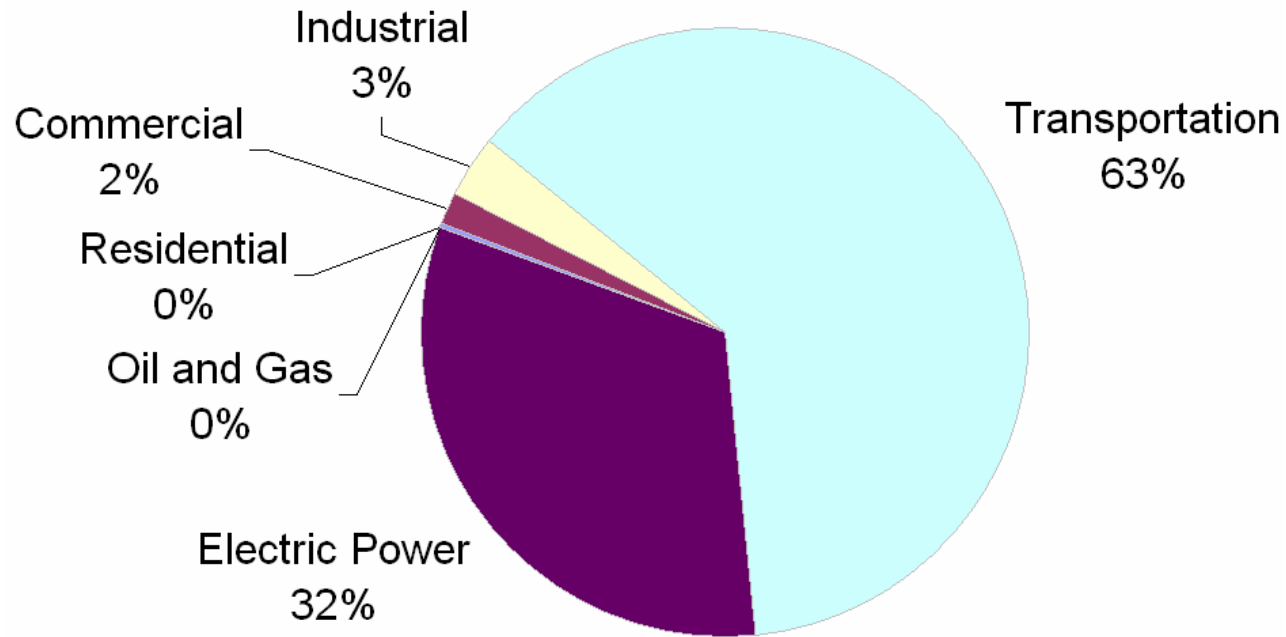
**Kilauea volcano emits  
sulfur dioxide**

**• not considered to be a  
greenhouse gas**

**• not controllable**

# GHG Emissions in Hawaii by Sector (1990)

Energy Emissions by Source, 1990



Total Emissions (*including aviation*) = 24.27 MMTCO<sub>2</sub>E

Total Energy Emissions (***excluding aviation***) = 14.32 MMTCO<sub>2</sub>E

**Most reductions will need to be made in transportation and use of electricity.**

# **Global Warming & Climate Change in Hawaii are expected to cause or intensify:**

- **Sea level rise**
- **Shoreline erosion & poor lowland drainage**
- **Saltwater intrusion into groundwater**
- **Ocean acidification and reef breakdown**
- **More frequent and severe storms**
- **Drought**
- **Sea surface temperature rise**



# Waikiki – Ala Moana: 1 Foot Risk



# UH SOEST

## Hawaii Mapping Research Group

1 Meter



# Which may impact:

Beaches, shorelines, coastal plains

Homes, farms, forests

Marine and land animals

Transportation

Land Use

Tourism

Drinking water

Food supply

Wastewater systems

Health Services

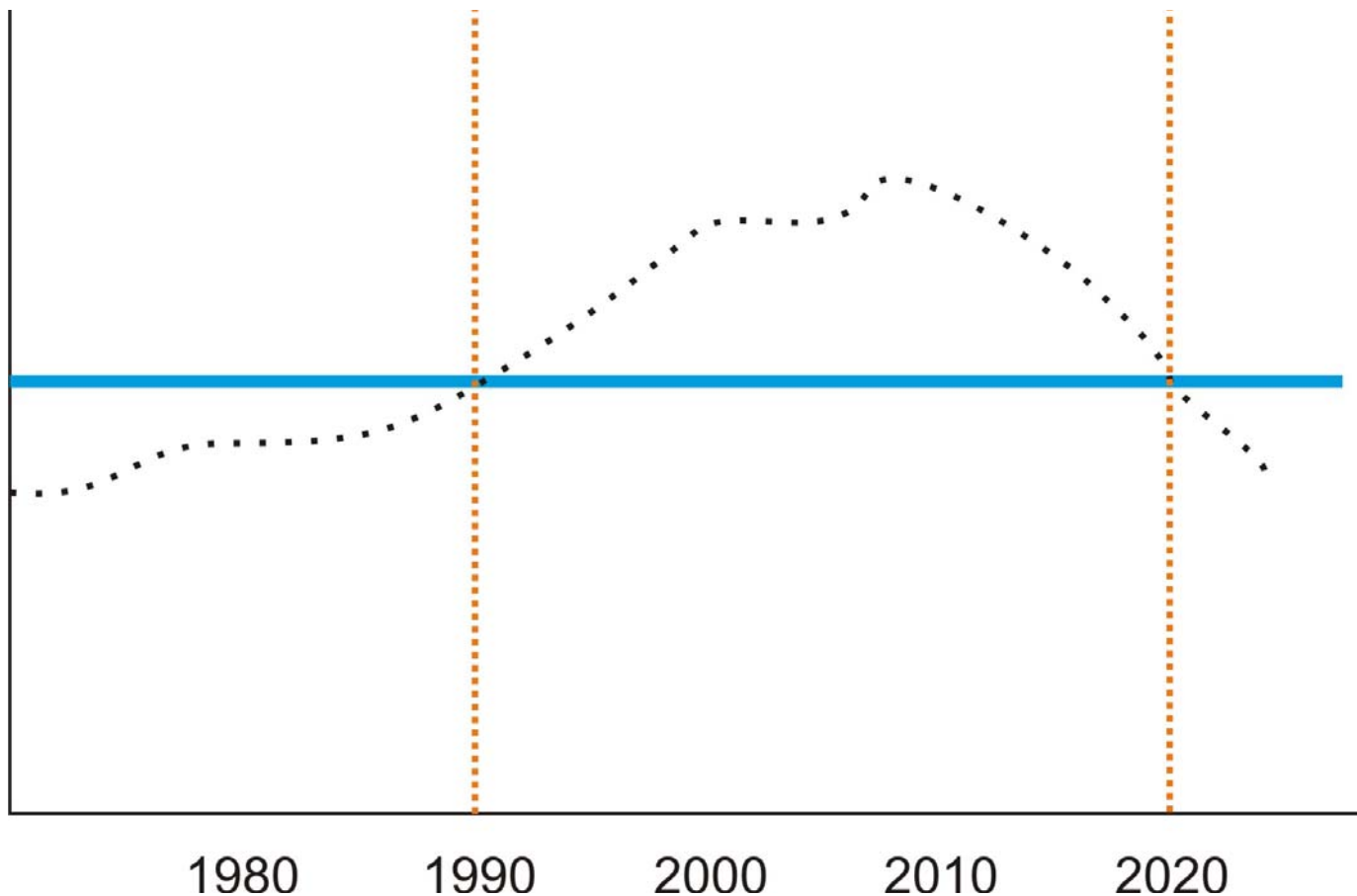
Health, Property, Business, Recreation





# ACT 234 (2007) Global Warming Solutions Act

Establish and cost-effectively set policy to reduce emissions of greenhouse gases (GHG), to the best estimate of 1990 levels, by January 1, 2020.



# Act 234 of 2007

## **1. Task Force of 10 members**

- Industry, nonprofits, state agencies

## **2. Inventory Update to set 1990 baseline**

- Public hearing held November 13, 2008
- Final document submitted to Legislature

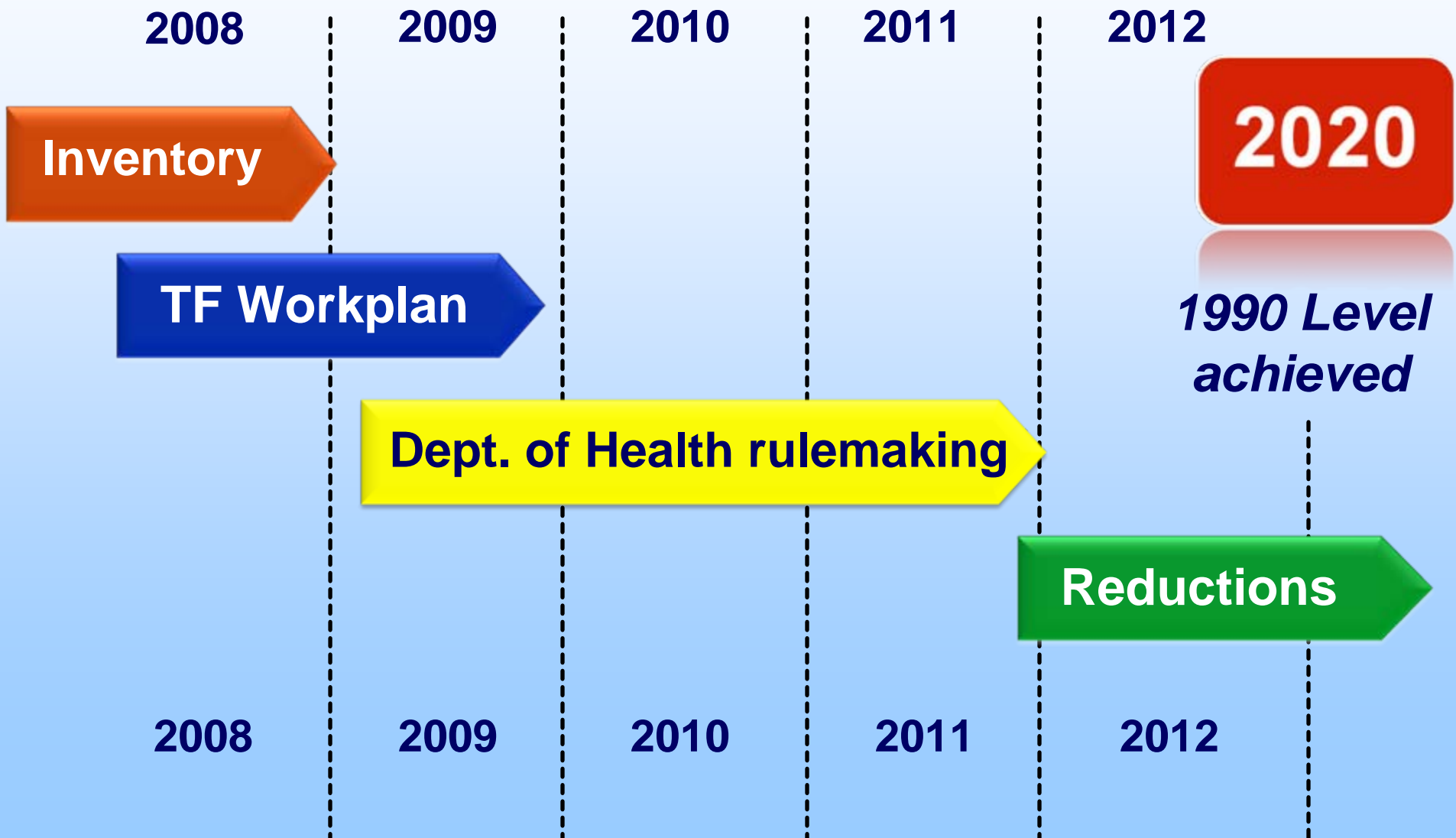
## **3. Work Plan and Recommendations**

- December 2009 and every 5 years thereafter

## **4. Administrative Rules setting GHG limits**

- Director of Health

# Global Warming Solutions Act 234 *Timeline*



# Members of the Task Force

- **Robbie Alm, Hawaiian Electric Co., Inc.**
- **Frank Clouse, Tesoro Hawaii**
- **Makena Coffman, University of Hawaii-Manoa**
- **Mark Fox, The Nature Conservancy**
- **Laurence Lau, State of Hawaii – DOH – co-chair**
- **Ted Liu, State of Hawaii – DBEDT – co-chair**
- **Lorenz Magaard, University of Hawaii-Manoa**
- **Jeff Mikulina, Sierra Club Hawaii**
- **Gary North, Matson Navigation Co.**
- **Gareth Sakakida, Hawaii Transportation Association**

# GHG Task Force Activities

- **Monthly Task Force general meetings**
  - First Thursday of every month, 3:00 – 5:00 PM
- **Monthly Committee meetings**
  - Analysis, Policy, Outreach
- **Input into the RFP Scope of Services**
- **Presentations**
  - Economic models, climate science, mitigation, policy options, legislation, The Climate Registry (TCR)
- **Goals and Priorities**
- **Outreach**
  - Information for public and sectors that may be impacted

# How Might Act 234 Affect You?

## Costs:

- **Utilities – electricity, gas, water, sewer**
- **Transportation – gasoline, shipping, air travel**
- **Businesses, especially high energy operations**
- **Consumer goods**

## Expanded & new technologies

- **Wind, solar, biofuels, wave**
- **Electric cars**



# Benefits of Act 234



- **Reduce dependence on imported fossil fuels**
- **Support clean, renewable, Hawaiian energy**
- **Invest Hawaii dollars in Hawaii**
- **Position Hawaii for expected national GHG laws**
- **Do our share to combat global warming**
- **Demonstrate leadership globally**

**Selected  
State, Regional,  
Federal, & International  
Activities**





## The Climate Registry

- **A GHG emission reporting system**
  - March 2007 incorp. as a non-profit orgn.
  - Hawaii a founding member
- **40 US states, 12 CAN provinces, 6 Mex States, 4 tribes, D.C.**
- **309 voluntary reporters**
- **Avoid multiple regional GHG registries**
- **Measurement is important 1<sup>st</sup> step**
- **Policy neutral**



## The Climate Registry

- **High quality**
  - 3d party verification of voluntary reports
  - Accreditation of verifiers
- **Uses International Standards (ISO)**
- **Goal: support national & international trading**
- **General Reporting and Verification Protocols in effect**
- **Climate Registry Information System (CRIS) operating**
  - Voluntary reporting operational
  - Mandatory reporting support software in development
  - Will network with EPA system

# Regional Greenhouse Gas Initiative (RGGI)

- First mandatory, market-based effort in the United States to reduce GHGs
- 10 NE & Mid-Atlantic states will cap, then reduce CO<sub>2</sub> emissions from electric power sector 10% by 2018.
- Emission allowances (**1 ton CO<sub>2</sub>**) auctioned.
- Auction \$ is for energy efficiency, renewable energy, & clean energy technologies.
- Auction 2 of 6 (12/19/08) clearing price was \$3.38 per allowance. **Revenue = \$107M**

# U.S. EPA

- Mandatory emissions reporting for all sectors of economy
  - Draft regulation due 9-30-08, not issued yet
- ISSUE: federal pre-emption?
  - Also relevant to Congressional action

# International

- COP-15
  - 15<sup>th</sup> **Conference of the Parties** to the UN Framework Convention on Climate Change
- in Copenhagen, Dec. 7-18, 2009.
- Expected to produce a successor to the Kyoto Protocol



**<http://hawaii.gov/dbedt/info/energy>**

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