



# *Hawai'i State Energy Office - Update*

**Joint Committee  
January 22, 2009**

# State Energy Office Values

- ▶ **Collaboration** - I will look for opportunities to give others the opportunity to contribute and I will value what they bring
- ▶ **Excellence** - always giving my best in everything I do; bringing my best self to each situation
- ▶ **Gratitude** - expressing appreciation for what I have and who others are in my life
- ▶ **Humility** - viewing myself realistically and recognizing I don't have all the answers
- ▶ **Humor** - not taking yourself too seriously
- ▶ **Respect** - valuing the individual regardless of the situation
- ▶ **Service** - aligning myself for the betterment of others - being others-centered
- ▶ **Trust** - believing the best of the people around me



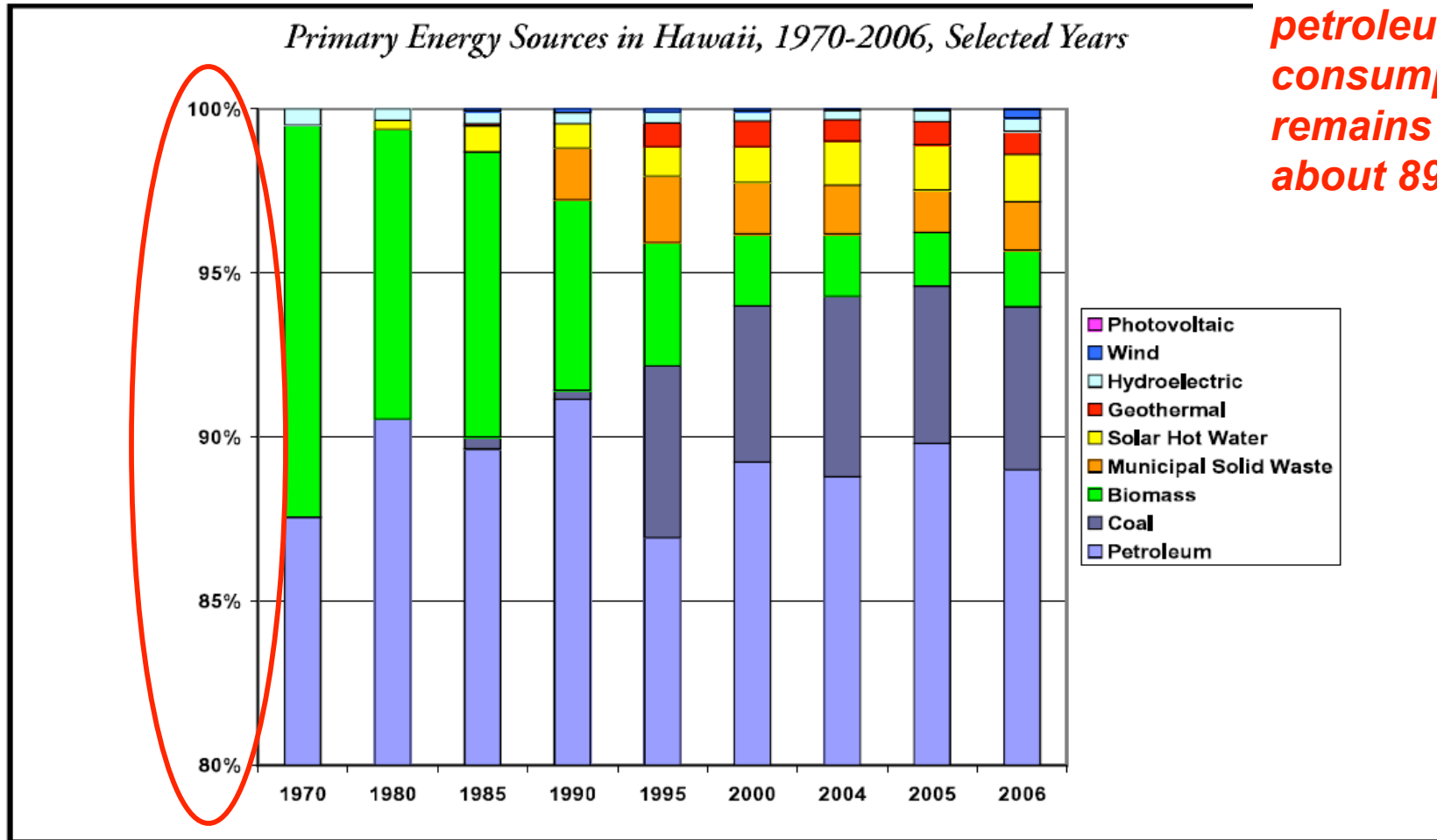
# Contents

- ▶ Hawaii's Energy Context – A Somber Reality
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# Reducing Hawaii's dependence on fossil fuels is a long-standing objective

Over 36 years, petroleum consumption remains at about 89%

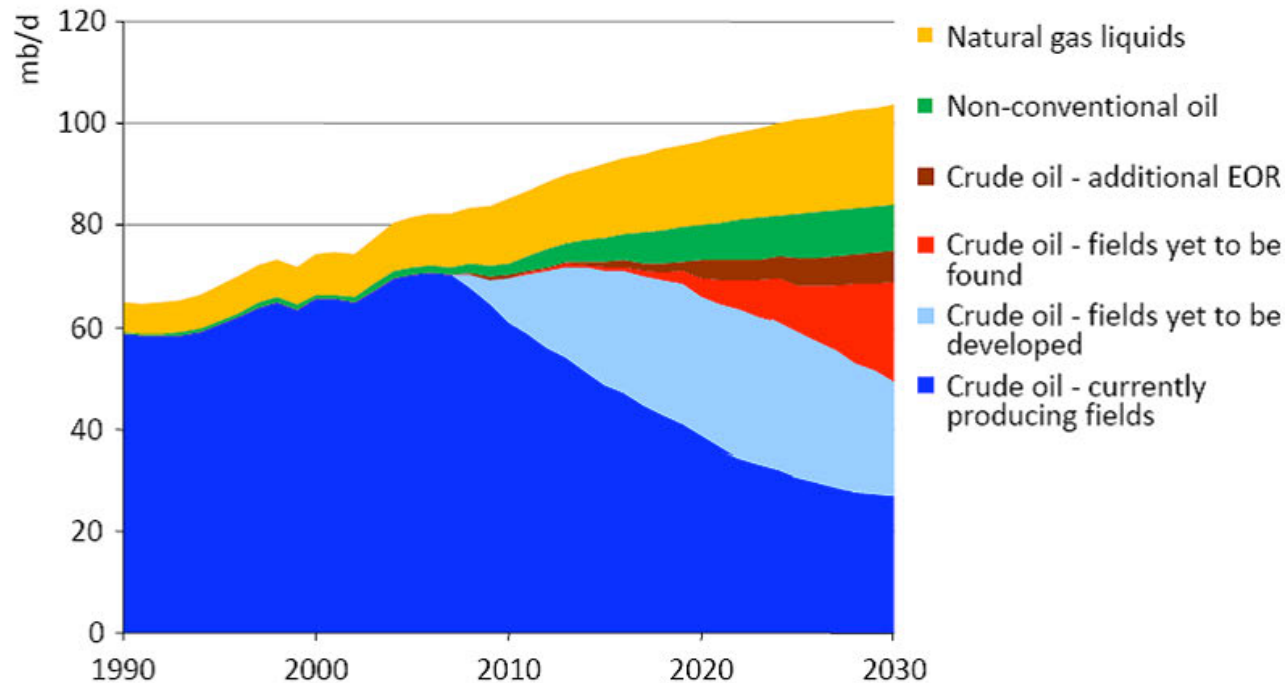


*Despite objective, little progress made – the needle has not moved*

# World oil production in the Reference Scenario

World  
Energy  
Outlook  
2008

Source: International Energy Agen

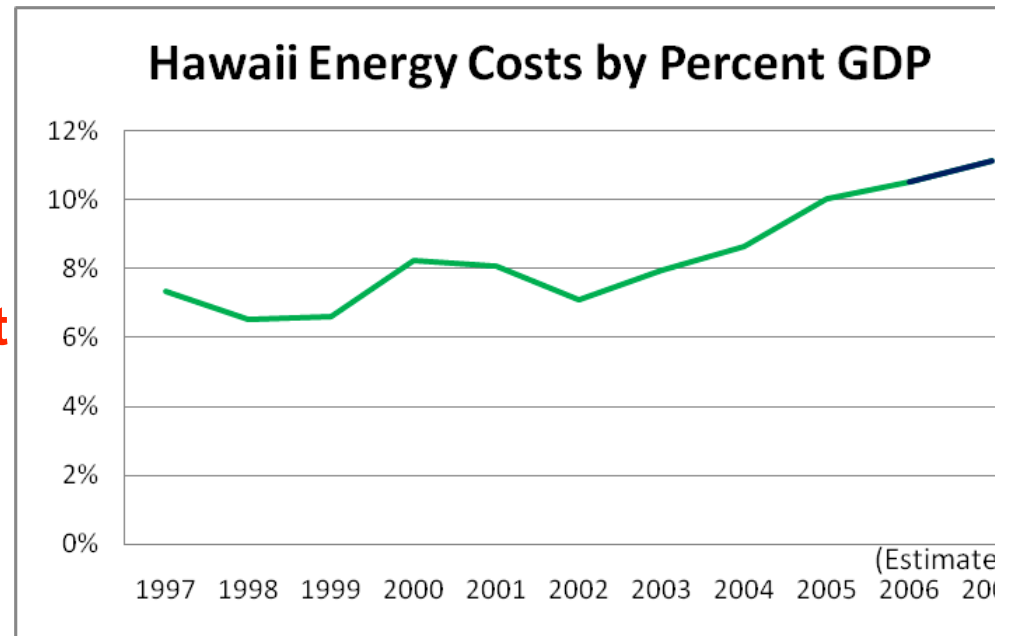


***To generate the energy required worldwide by the 2030s would require us to find an additional 1.4 MBD every year until then.***

***Can Hawaii assume this will happen, and base our future on it?***

# Economic impact of dependence on expensive energy

- ▶ Household fuels and utilities **costs rose 36.4 percent**, year-over-year, in the Honolulu CPI during 2Q'08
- ▶ Mainland energy costs are 4% of a state's Gross Domestic Product; in Hawaii, it approaches 11%, **almost 3 times as much**
- ▶ Between 2007 and 2008, State Government **consumption** of electricity has **decreased 1.17%**, but **expenditures** have **increased 19.55%**



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# Hawaii Clean Energy Initiative

## National Partnership to Accelerate System Transformation

The goals are:

- ▶ Achieve a **70% clean energy economy** for Hawaii within a generation
- ▶ Increase Hawaii's **security**
- ▶ Capture **economic benefits** of clean energy for all levels of society
- ▶ Foster and demonstrate **innovation**
- ▶ Build the **workforce** of the future
- ▶ Serve as a **model** for the US and the world





# HCEI analysis & project activities

- ▶ **70% Clean Energy scenario analysis (Booz Allen Hamilton)**
- ▶ **Hawaii greenhouse gas carbon tax/abatement analysis (McKinsey & Company)**
- ▶ **Economic modeling of energy system**
- ▶ **Inter-island cable: feasibility and cost/benefit studies**
- ▶ **Technical and economic assessment of plug-in hybrid and electric vehicles**
- ▶ **100% Renewable Lanai**
- ▶ **Forest City Highly Efficient Communities**
- ▶ **Modeling electricity grids on all islands**
- ▶ **Maui grid integration**
- ▶ **Bioenergy Master Plan**
- ▶ **Wind resource and storage testing**
- ▶ **Regulatory framework development**

**World class studies and expertise leading to projects with a broad base of partners**



# HCEI-related events & milestones

- ▶ **State Renewable Energy Facilitator authorized**
- ▶ **First year of GHG Emission Reduction Task Force**
- ▶ **Marine Renewable Energy Center**
- ▶ **Hawaii, Taiwan, and Lockheed OTEC partnership**
- ▶ **Feed-in Tariff and Decoupling Dockets open and in progress**
- ▶ **HECO Smart meter initiative**
- ▶ **Third Party Administrator contract in negotiations**
- ▶ **Solar Water Heater Mandate for new construction homes became law**
- ▶ **DOE-Hawaii hospitality roundtable for energy efficiency**
- ▶ **Better Place announced first statewide initiative in Hawaii – HECO MOU**
- ▶ **Phoenix Motorcars announced EV testing on Maui with MECO**
- ▶ **Hawaii Renewable Energy Development Venture kicked off**

**Broad base of activities across the state on a systemic level**



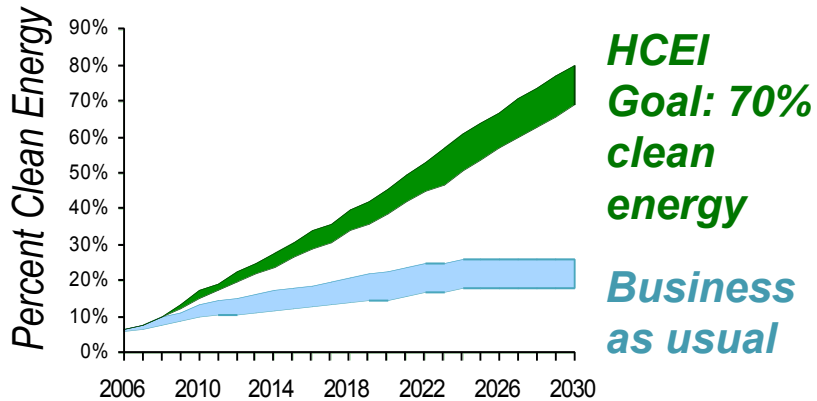
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# The 2009 legislative package is one step toward the 70% clean energy goal, and it sends the message that Hawaii is serious about being a leader

- ▶ **PREMISE:** The primary barriers to reaching 70% clean energy are not technical or financial; they are policy-driven: *change incentives and behavior by changing established framework of rules*



- ▶ This legislative package is one step in the process of changing the rules—to do so it's important to view the package whole, as a comprehensive approach to energy policy, and in the context of other HCEI initiatives

- ▶ *How far does the 2009 legislative package go toward HCEI efficiency, generation and transportation? **Indicatively:***

		HCEI Goal	Expected results 2009 package
Electricity	Efficiency	30%	9%-17%
	Electric Generation	40%	~35%
		<b>70%</b>	
Transportation (ground)		70%	~30%

- ▶ **Future Steps:**
  - **Efficiency:** *In the next years, the State will need to be aggressive on 1) public buildings, 2) a sizable energy efficiency program for commercial buildings, 3) zero net energy building code by 2015. Promotion and implementation of efficiency programs—e.g., on-bill financing—will be critical to realize*
  - **Electric Generation:** *The PUC will be shouldering responsibility for setting rules for feed-in tariffs, electricity decoupling, etc PUC's timely implementation will be extremely important*
  - **Transportation:** *The 2009 package is designed to catalyze market—e.g., create infrastructure for Alternative Fuel Vehicles—so the legislative package starts the process to deliver the transformation needed to hit 70%. In 2010, we will propose policies to ensure adequate supplies of biofuels, continue to using AFVs; also we will analyze clean energy options for aviation/marine transportation*

# Electricity Generation and Delivery

- ▶ Renewable Portfolio Standard – 40% by 2030
- ▶ No new fossil generation allowed
- ▶ Net Energy Metering Caps Removable by PUC
- ▶ Renewable Energy Zones (business and transmission enabler)
- ▶ Renewable Energy Facilitation Process for 5-200 MW available



# Efficiency

- ▶ Energy Efficiency Portfolio Standard – 4300 GWH (30%) by 2030
- ▶ Analysis that Building Codes provide expected payback
- ▶ On-bill Financing for Energy Efficiency and Renewable Energy expanded
- ▶ Tax Credits for Net Zero Energy Homes
- ▶ Renewable Energy & Energy Efficiency Tax Credit Provisions
- ▶ Consumer Information on home energy profile



# Transportation

- ▶ Infrastructure incentives to support electric vehicles
- ▶ Facility size cap for biofuel facilities removed for tax credit
- ▶ Incentives for leading edge adopters of Electric, Alternative and Fuel Economy Leader Vehicles
- ▶ State and county vehicle fleet mandates
- ▶ Non-government fleet and dealer mandates - alternative fuel vehicle standard



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# Hawaii State Energy Office – by Function



# Key to Symbols

**1**

*Personnel embedded in READ*

**22**

*Analogous to a Current Position (3 vacant)*

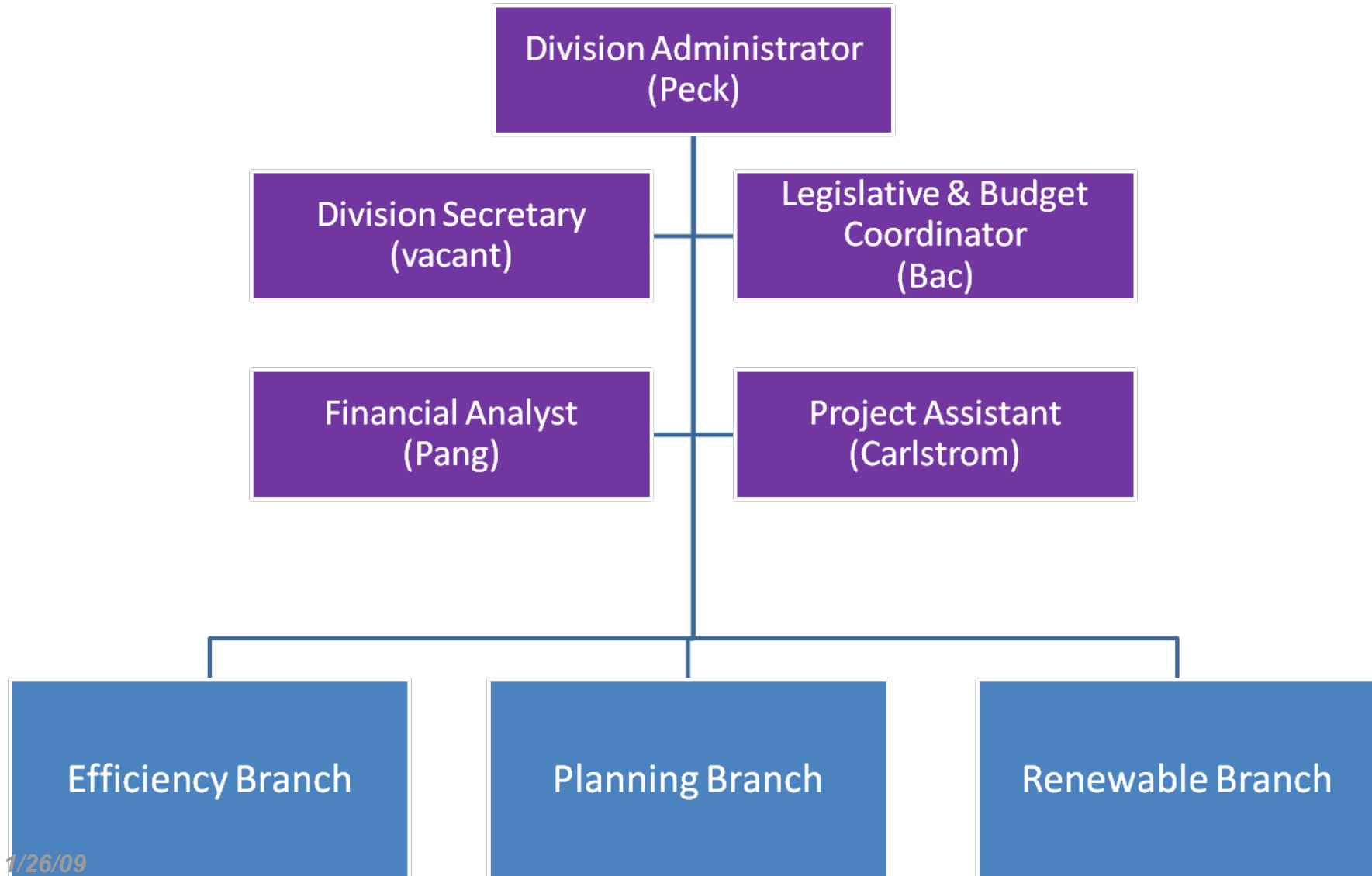
**7**

*New Position (1 embedded in READ)*

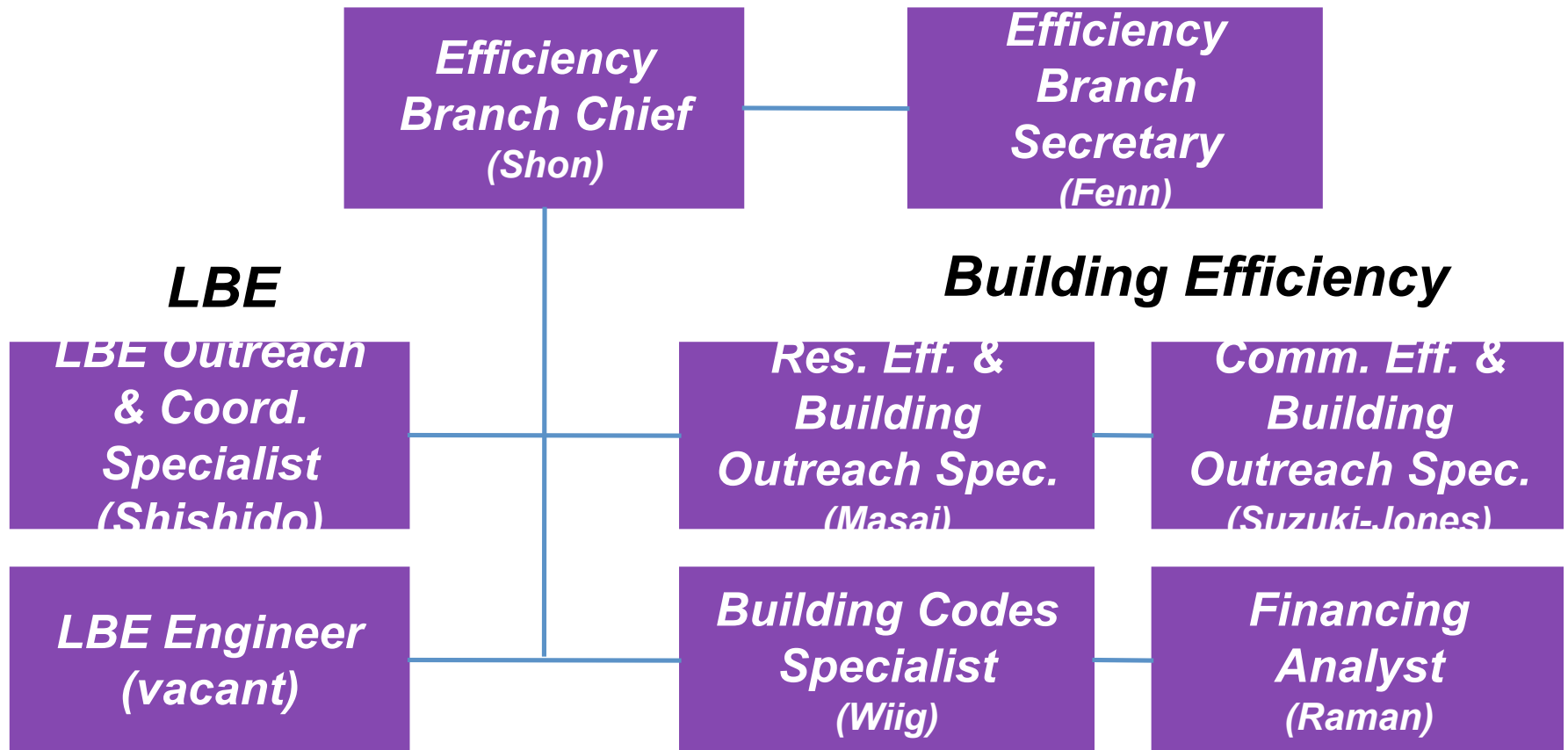
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*Total Position Count*

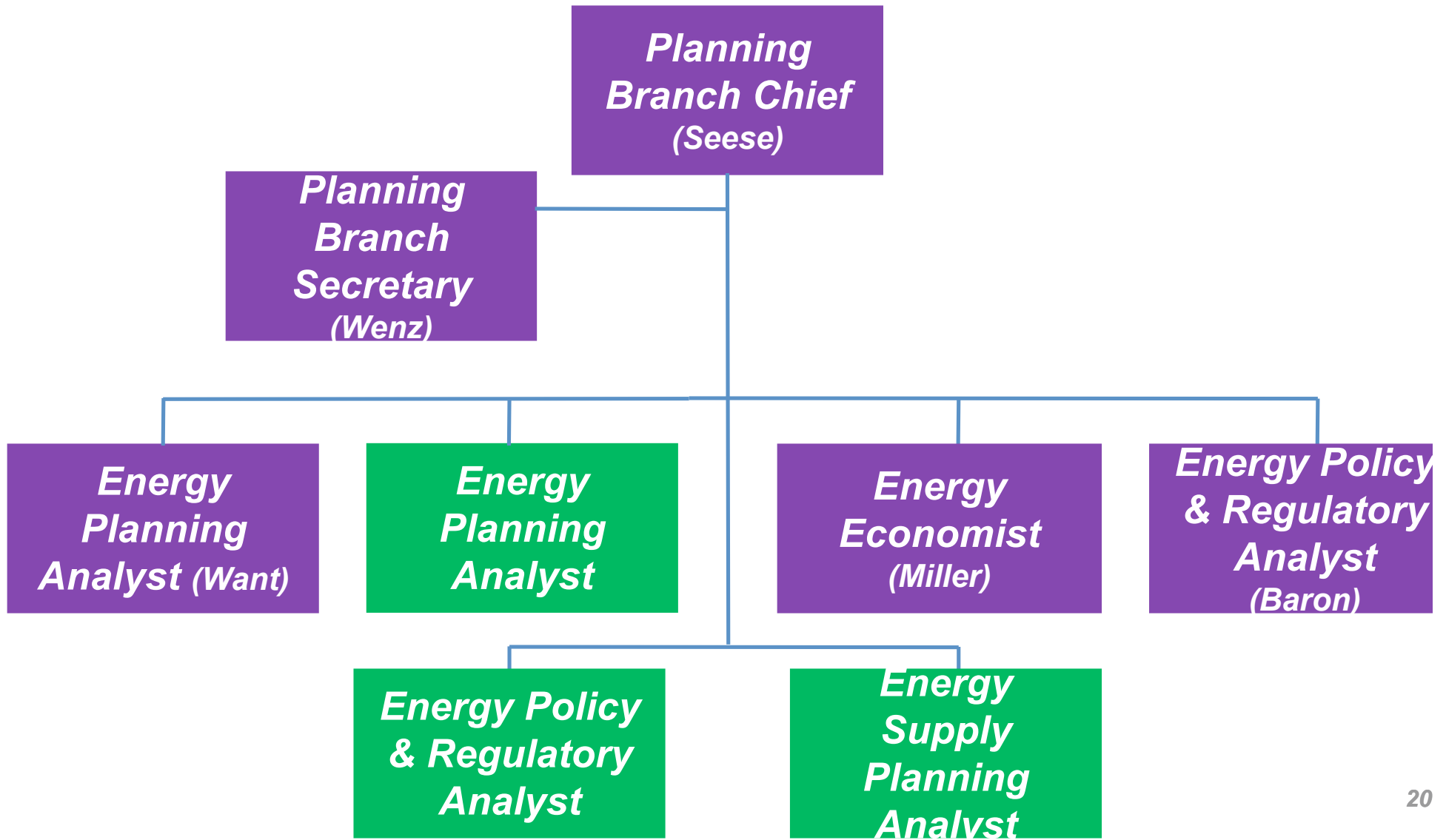
# Energy Division



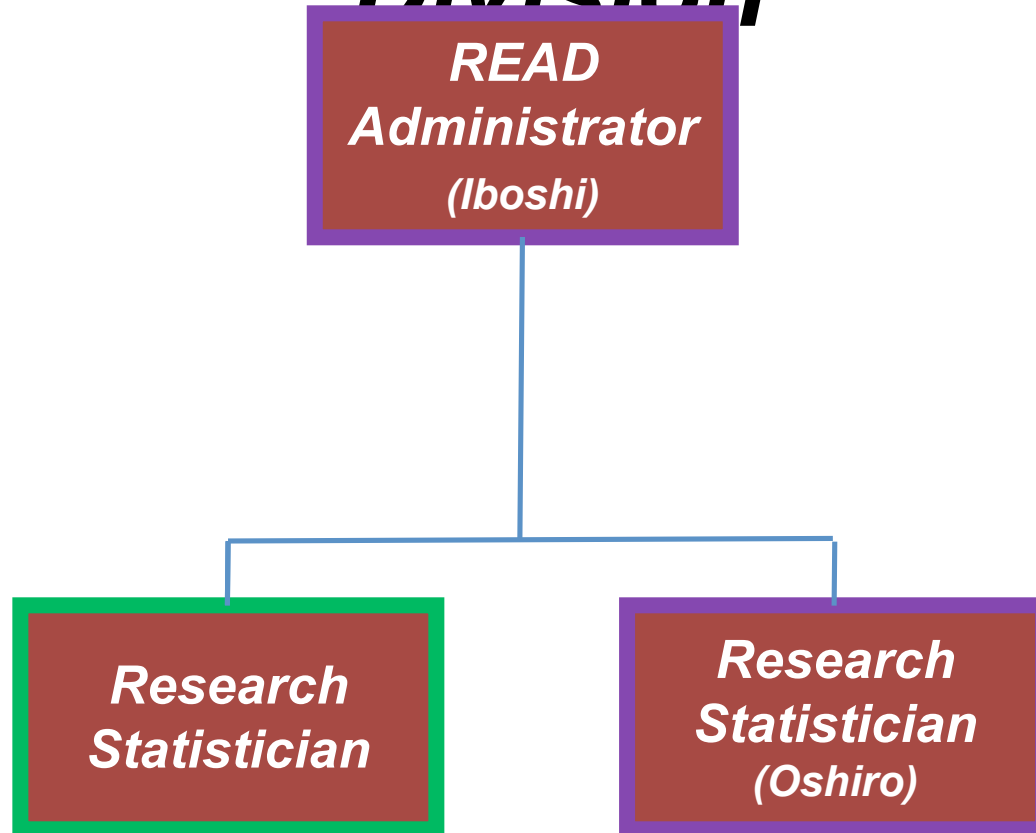
# Energy Division – Efficiency Branch



# ***Energy Division – Planning Branch***



# ***Research & Economic Analysis Division***



# Energy Division – Renewable Branch

