



# 2008 Legislative Mini-Forums

---

Maine Development  
Foundation

Margaret Chase  
Smith Policy Center

Muskie School of  
Public Service

University of Maine  
School of Law

## Energy Alternatives and Policy

Lead Presenter: Jonathan Rubin  
Margaret Chase Smith Policy Center

March 5, 2008

## Outline

- National drivers
  - Why Alternative Fuels?
- Transportation Revenue Implications
- Feedstock Availability
- Life Cycle Impacts
- Some solutions
  - Maine biofuels, wind, tidal

### National Drivers Energy Policy & Alternative Fuels

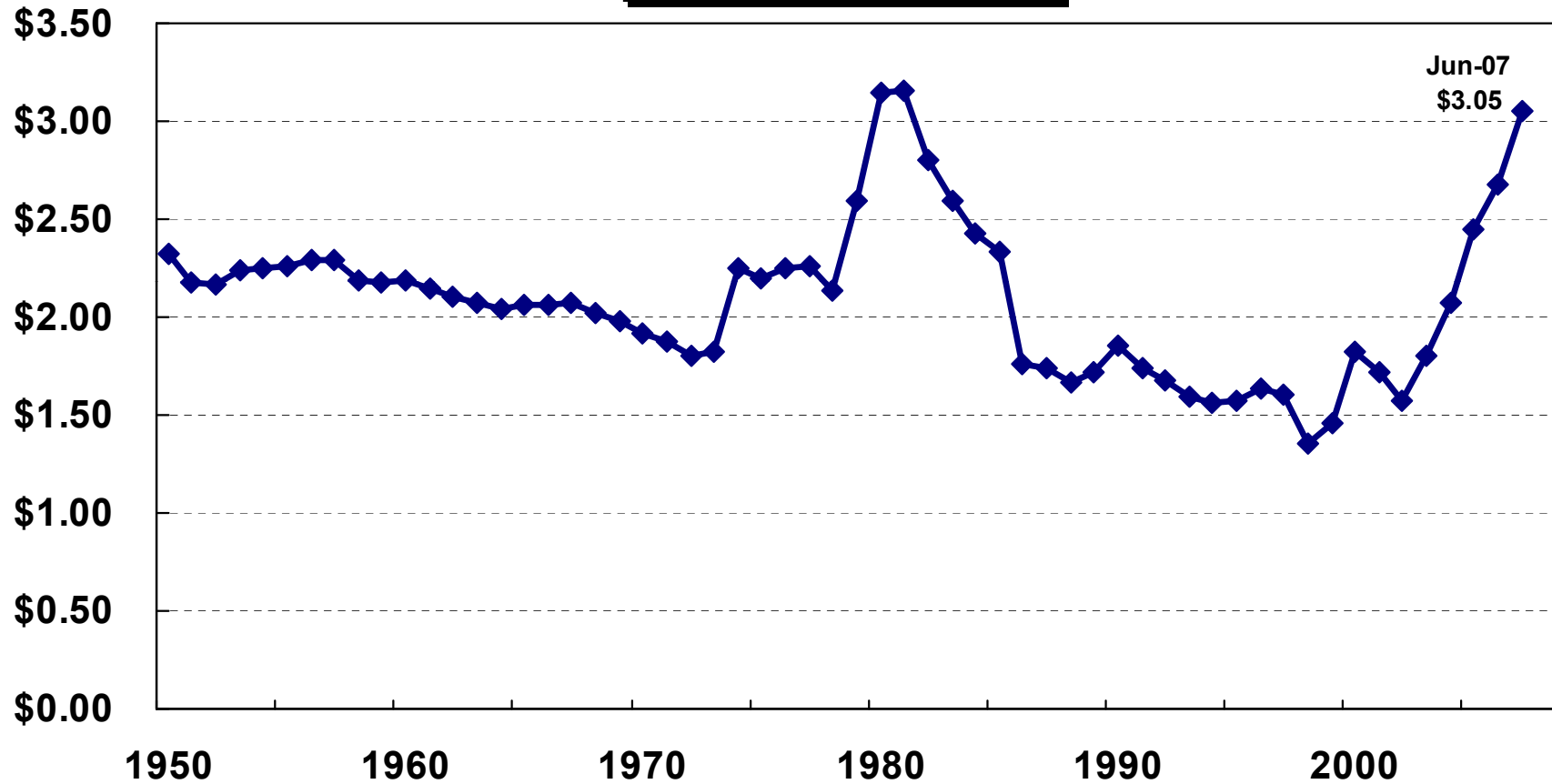
- January 2007 - State of the Union Address—20-in-10 goal
- April 2007 Supreme Court Decision
- May 2007 EPA publishes RFS (7.5 billion gallons by 2012)
- May 2007 President's Announcement and Executive Order (35 billion gallons renewable and alternative fuel)
- December 2007 Energy Independence and Security Act (**EISA**)
  - 36 billion gallon renewable fuels
- National Low carbon fuel standard?
  - California currently implementing own standard

### Why Alternative Fuels?

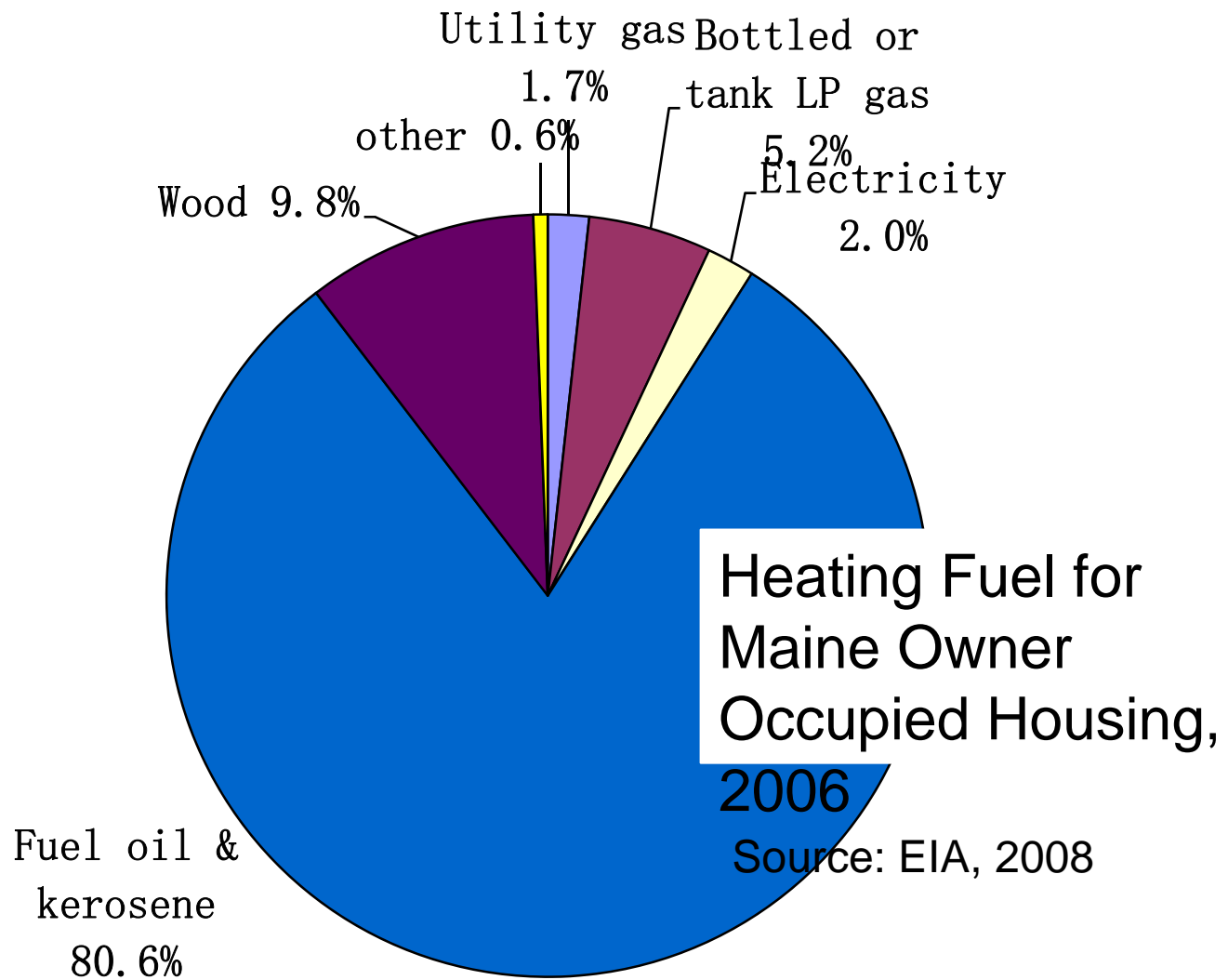
- Transportation Sector: 97% dependent on petroleum
  - Energy security
    - Balance of Payments
  - GHG emission reduction
  - Economic opportunities

# 2008 Legislative Mini-Forums

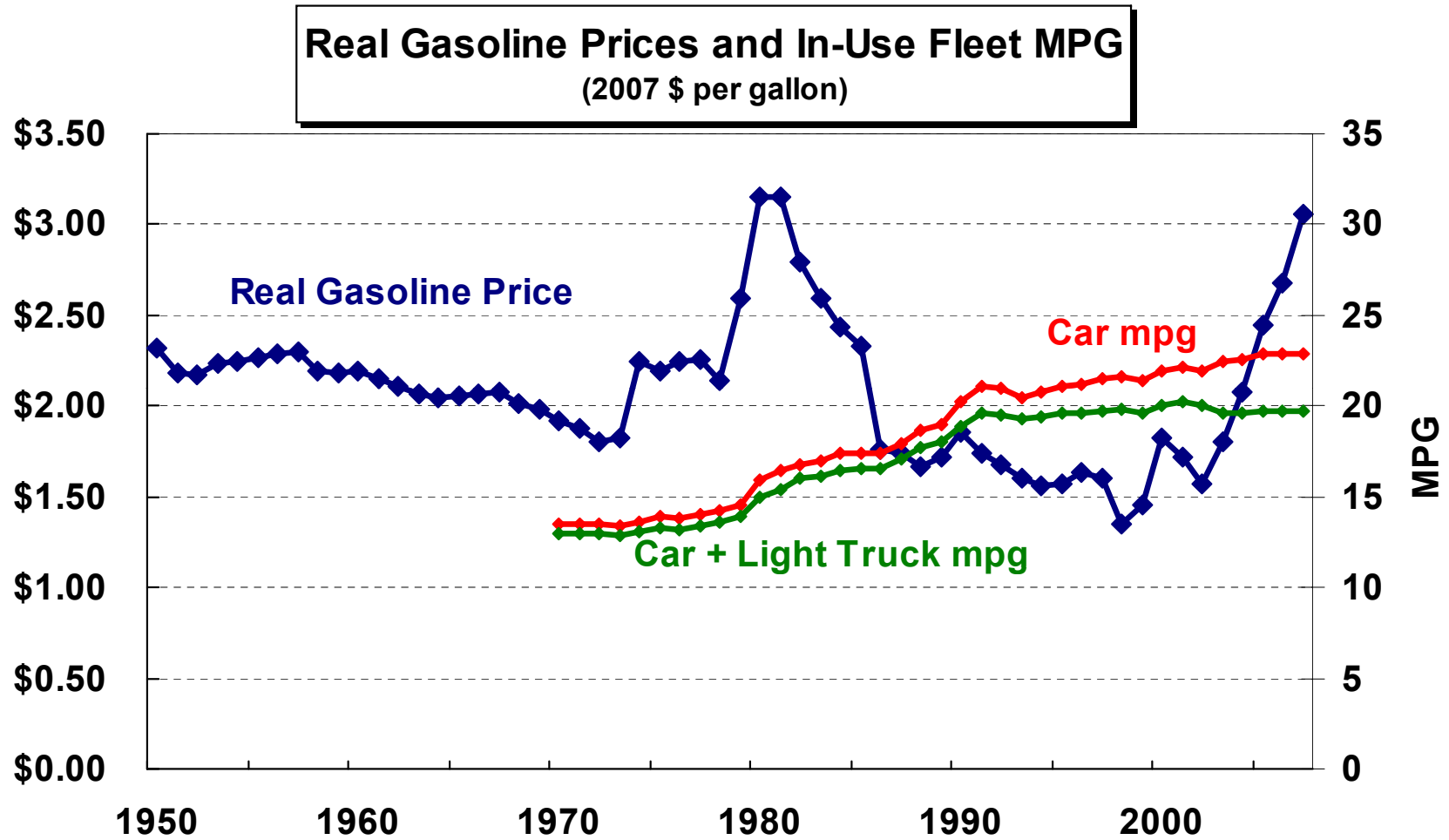
**Real Gasoline Prices**  
(2007 \$ per gallon)



Motor Gasoline Retail Prices, U.S. City Average, adjusted using CPI-U



# 2008 Legislative Mini-Forums



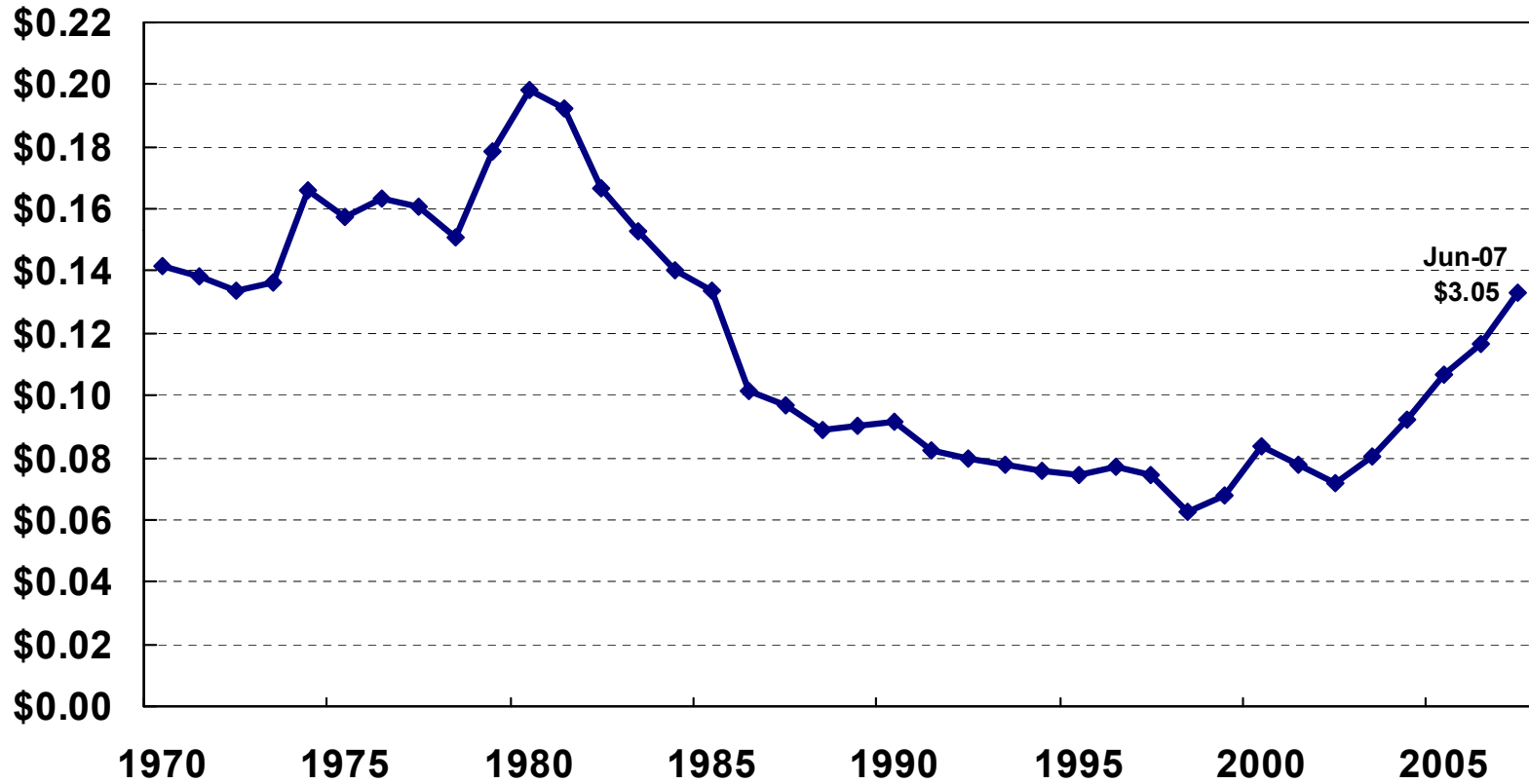
In-Use MPG from Transportation Energy Data Book: 2007

Source: German, J. American Honda Motor Corp., 2008

Maine Development Foundation • Margaret Chase Smith Policy Center  
Muskie School of Public Service • University of Maine School of Law

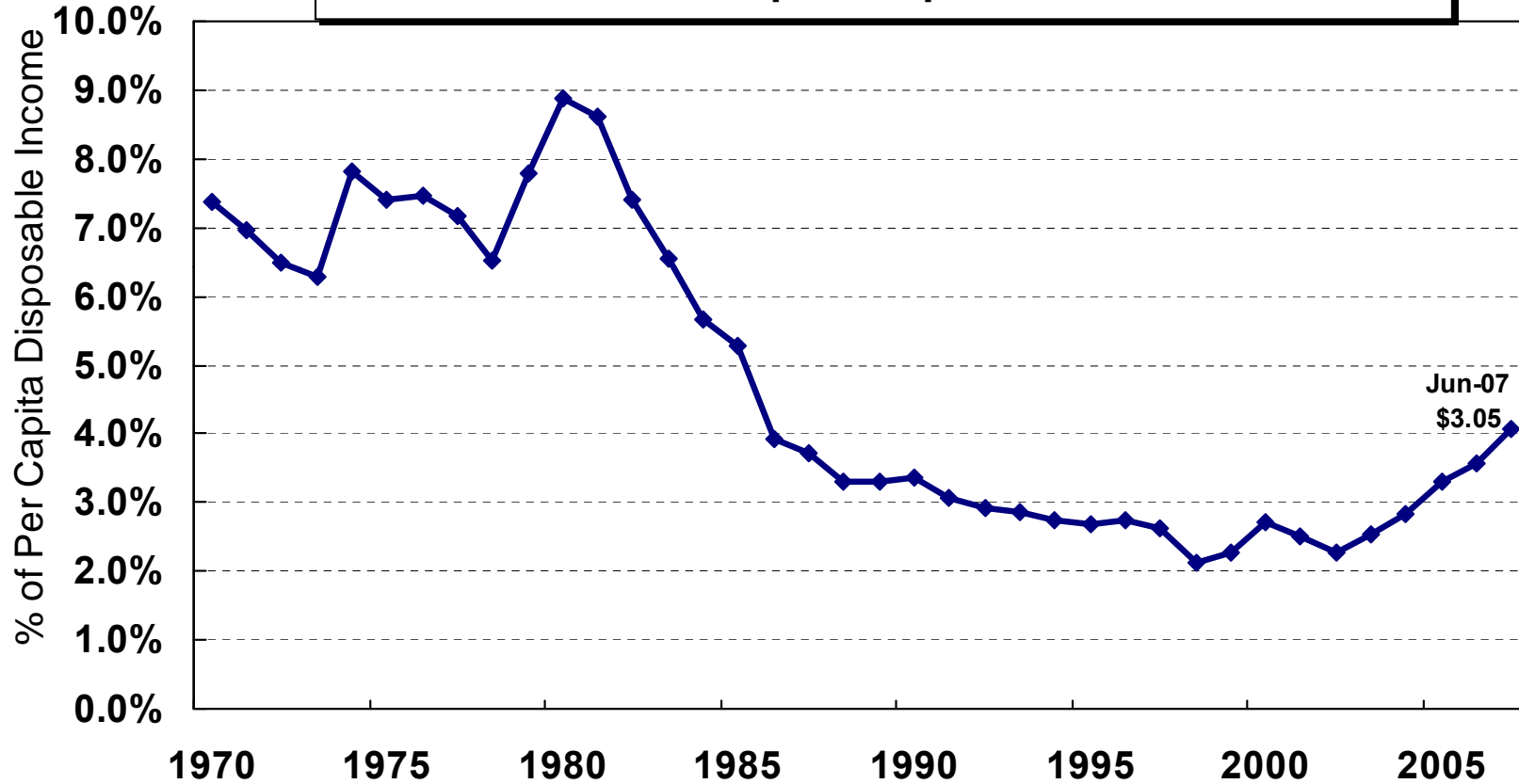
# 2008 Legislative Mini-Forums

**Real Gasoline Cost for Cars - Cents per Mile**  
(2007 \$ per gallon)



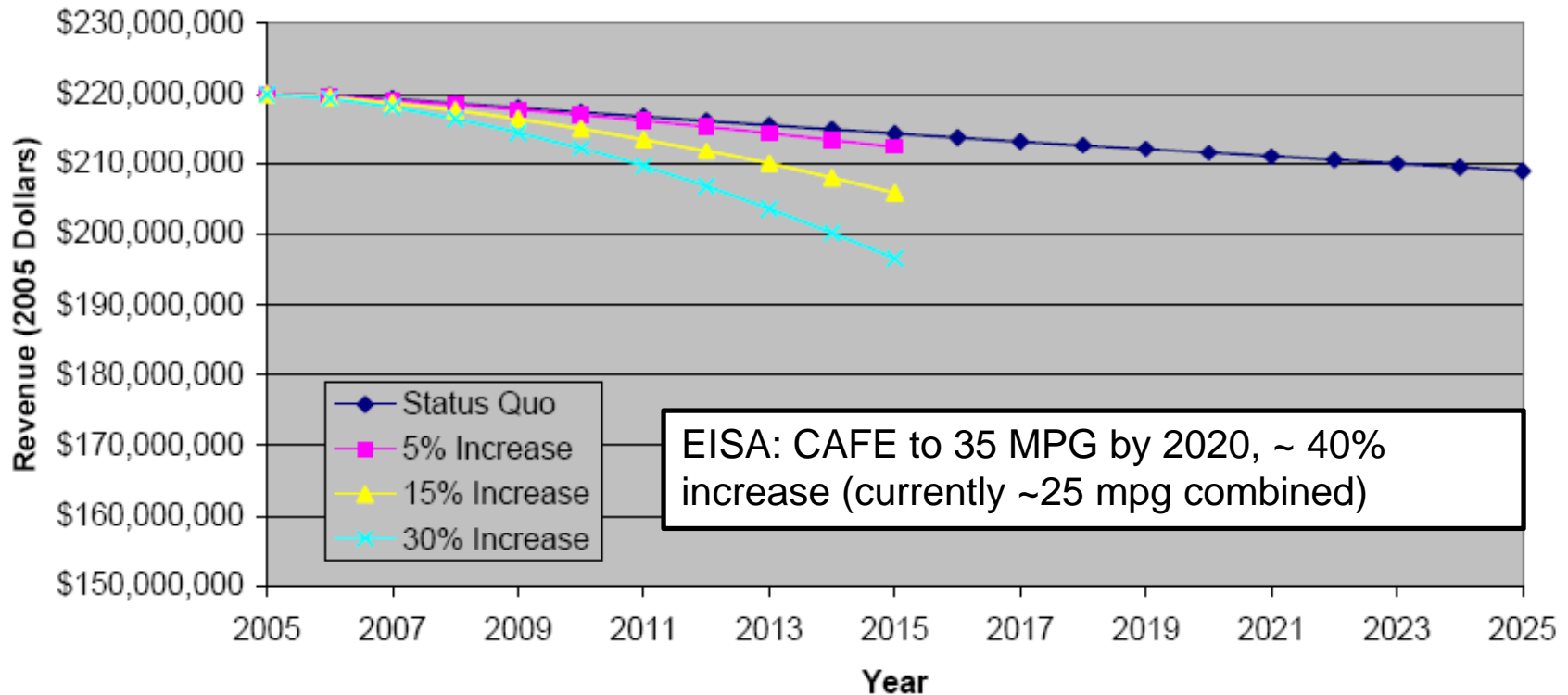
# 2008 Legislative Mini-Forums

**Real Fuel Cost of Driving a Passenger Car 10,000 Miles  
% of Per Capita Disposable Income**



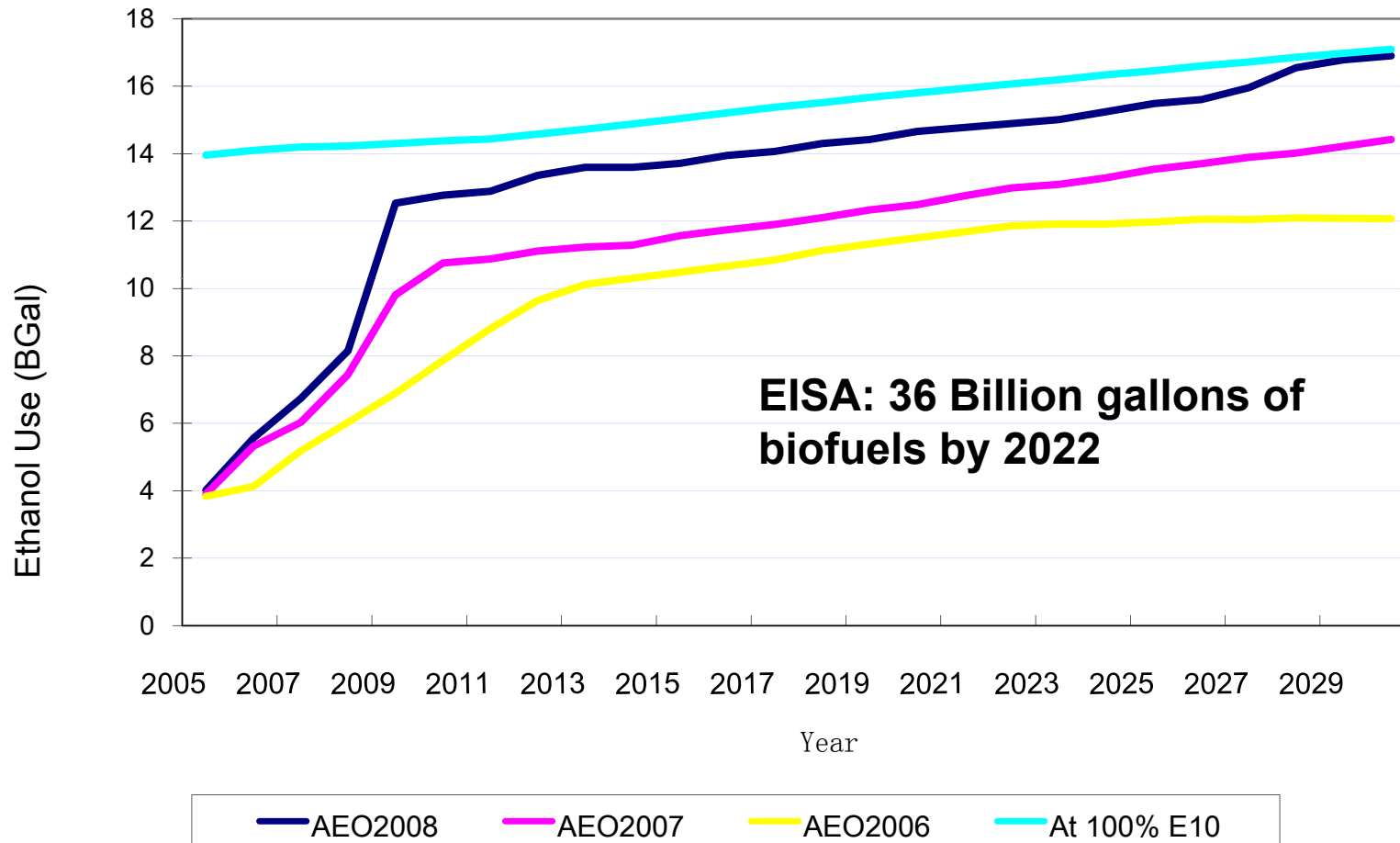
BEA, Table 2.1, Personal Income and It's Disposition

## Maine Fuel Tax Revenue Projections: Changes in Fleet Fuel Efficiency



Noblet et al., Sustainable Transportation Funding for Maine's Future, Margaret Chase Smith Center, 2006

## Ethanol is the most popular biofuel in the US



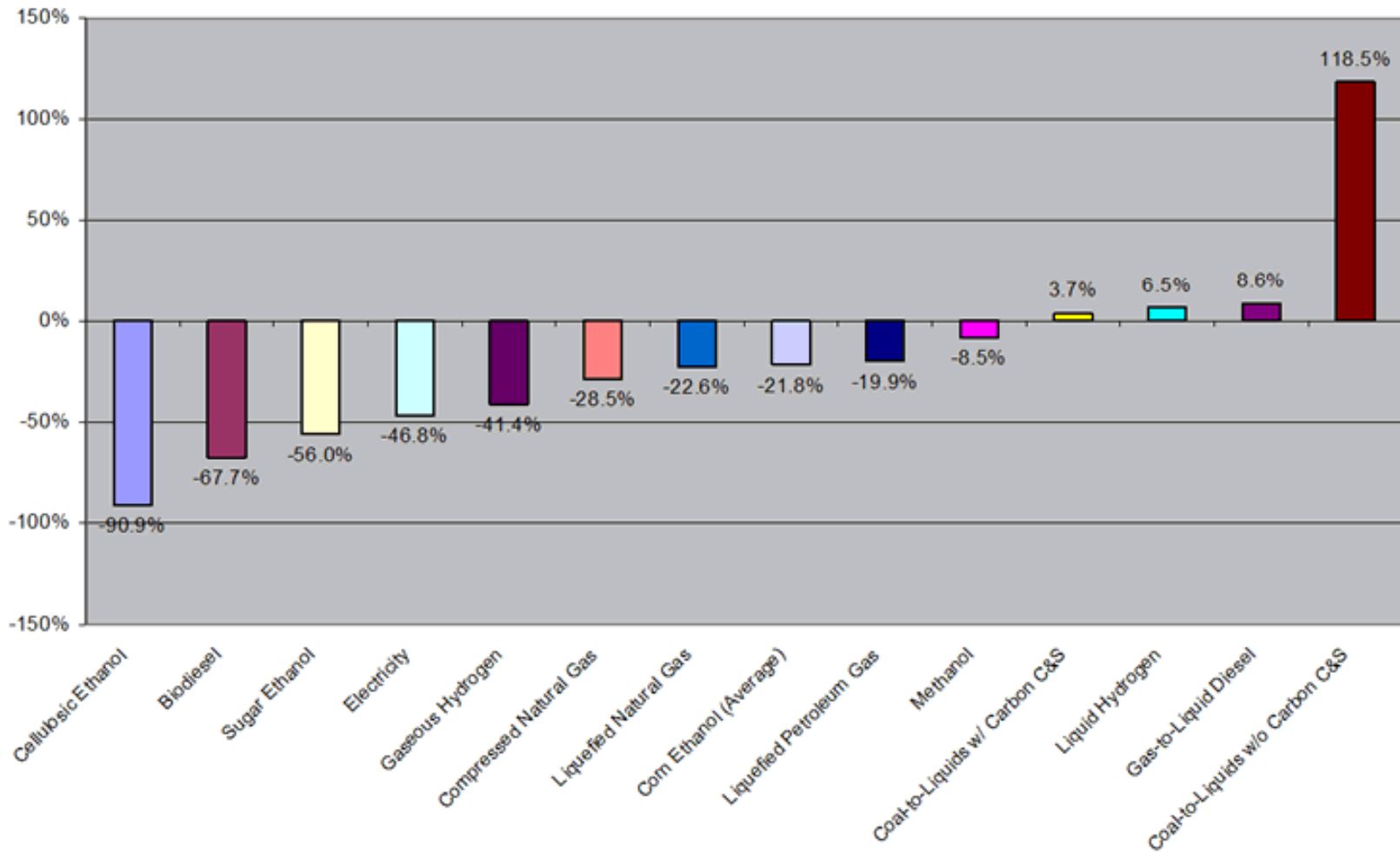
### **EISA Requires Lifecycle Assessment**

- Fuels must meet mandated GHG performance thresholds (phase-in dates vary)
  - 20% reduction for new facility renewable fuel
  - 50% reduction for biomass-based diesel
  - 50% reduction for advanced biofuels
  - 60% reduction for cellulosic biofuel
- Lifecycle assessment must include impacts on land use

# 2008 Legislative Mini-Forums

## Life Cycle Assessment

Percent Change in GHG Emissions



Source: EPA, Greenhouse Gas Impacts of Expanded Renewable and Alternative Fuels Use EPA420-F-07-035, April 2007

### Current Maine Biofuels Use

- Maine used 600,000 gallons of pure biodiesel in the last year (.3% of diesel market)
  - One Maine-based company, Green Bean Bio-Fuel, produced 150,000 gallons of biodiesel from waste grease
- Xtra Mart offers 10% ethanol at its eight Maine pumps
- Safe Handling opened an ethanol terminal in December 2007

### Very little biofuels currently produced or used in Maine

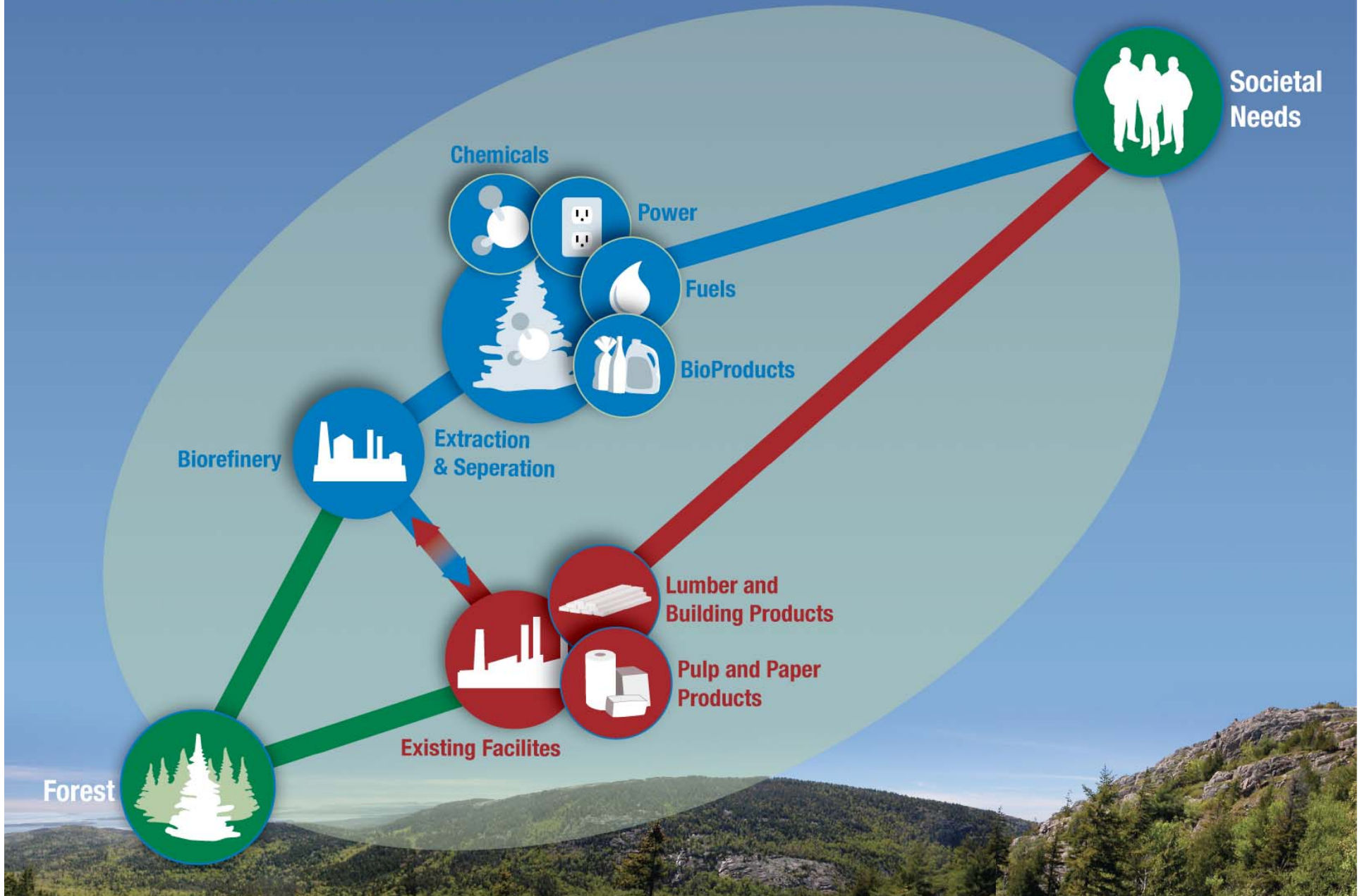
Source: R. Rockefeller, "Liquid Biofuels Policy for Maine: A Report to the State Legislature," 2008

### Some Solutions

- No magic bullet
- Efficiency Improvements
  - Vehicles
  - Residential, commercial, industrial
- State Production of energy
  - Biofuels, wind, tidal
- Regional partnerships
  - New England & Canadian Provinces



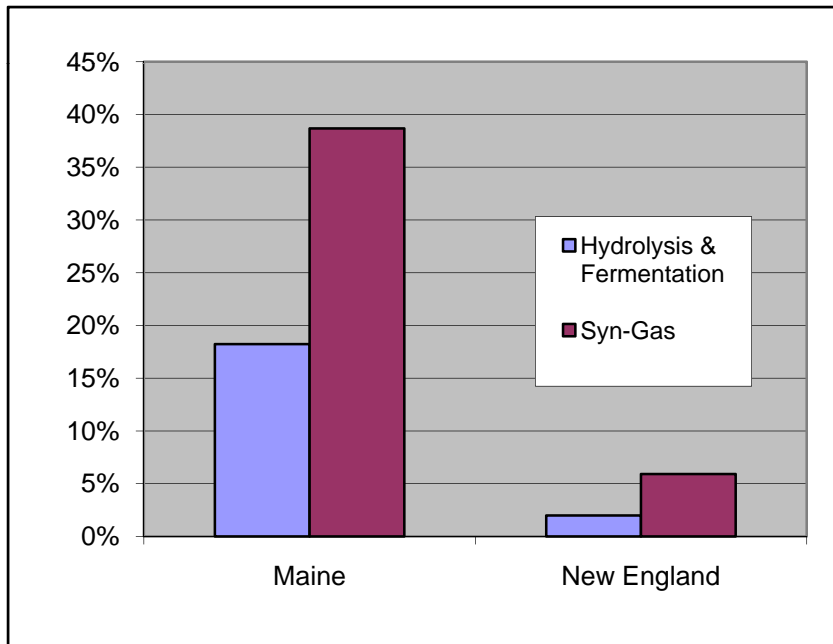
# FOREST BIOPRODUCTS RESEARCH INITIATIVE



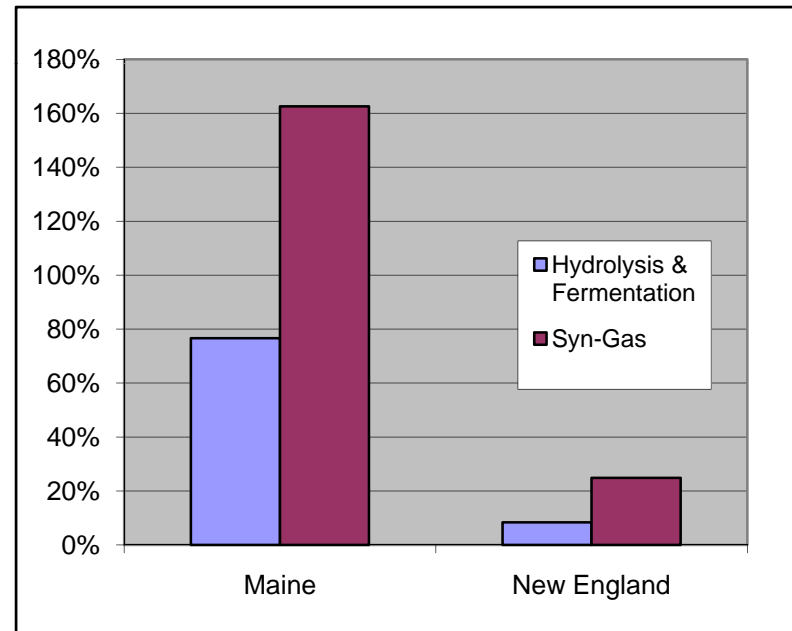
# 2008 Legislative Mini-Forums

## Maine Biofuel Supplies

% Petroleum Based Fuel Consumption  
from Forest Residue Removals



% Petroleum Based Fuel Consumption  
from Total Removals (Residual +  
Roundwood)



Dickerson et al., Biomass & Biofuels in Maine, Margaret Chase Smith Policy Center 2007

### Contact Information

Jonathan Rubin  
Margaret Chase Smith Policy Center and School of Economics  
University of Maine  
(207) 581-1528  
Jonathan.rubin@umit.maine.edu

### Additional Resources

Dave Owen  
Associate Professor (Environmental Law)  
University of Maine School of Law  
(207) 780-4214  
dowen@usm.maine.edu

Rita Heimes  
Director, Center for Law and Innovation  
University of Maine School of Law  
(207) 874-6521  
rheimes@usm.maine.edu