

Biodiesel: Fuel Supply Perspective and State Policy Context

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Biodiesel Roundtable
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Fuel Supply Context

California is about 95 percent petroleum dependent for people and goods movement

California consumed over 900 million gallons per year of ethanol and over 11.5 million gallons of biodiesel fuel in 2005.

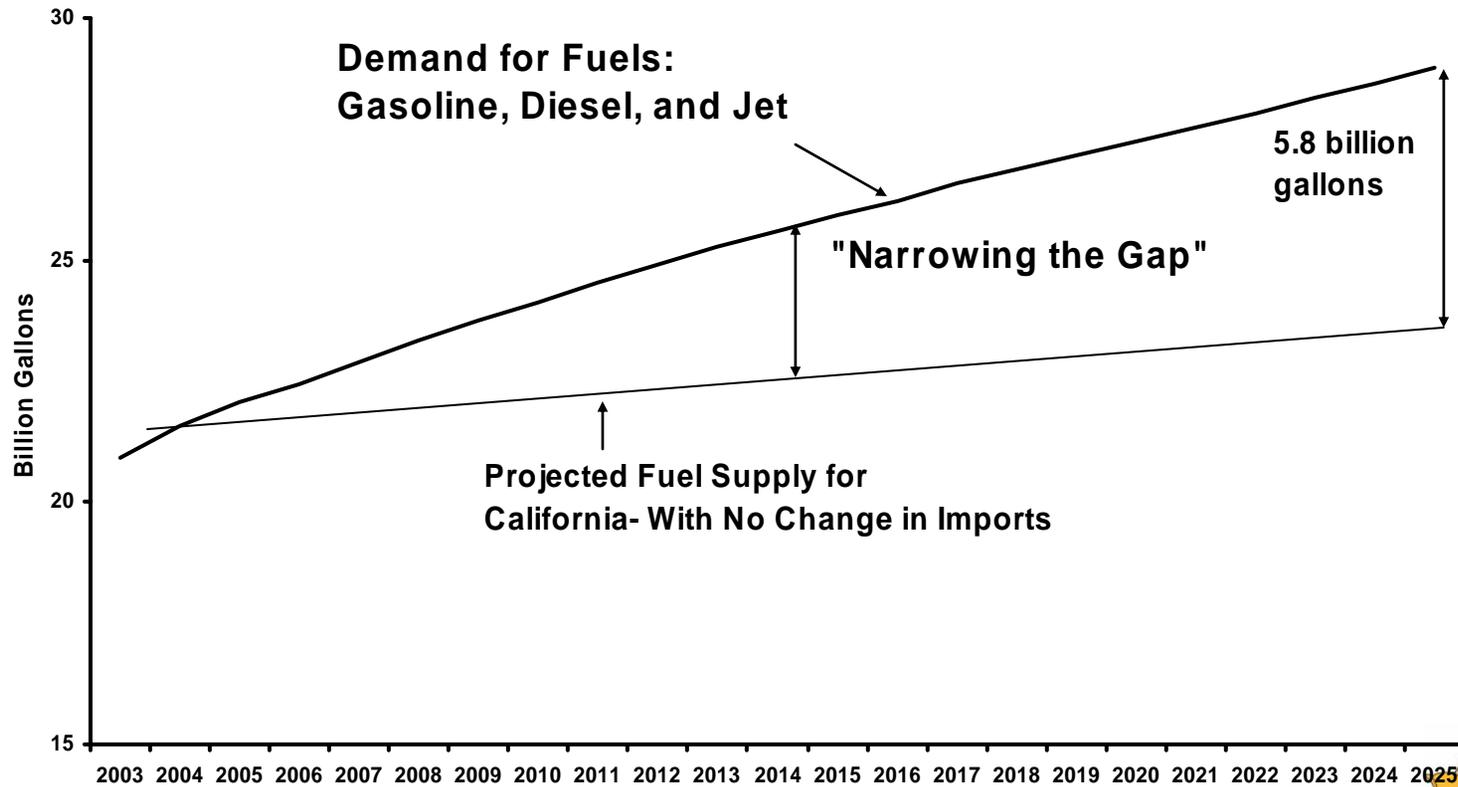
There are multiple pathways to convert biomass residues to transportation fuels.

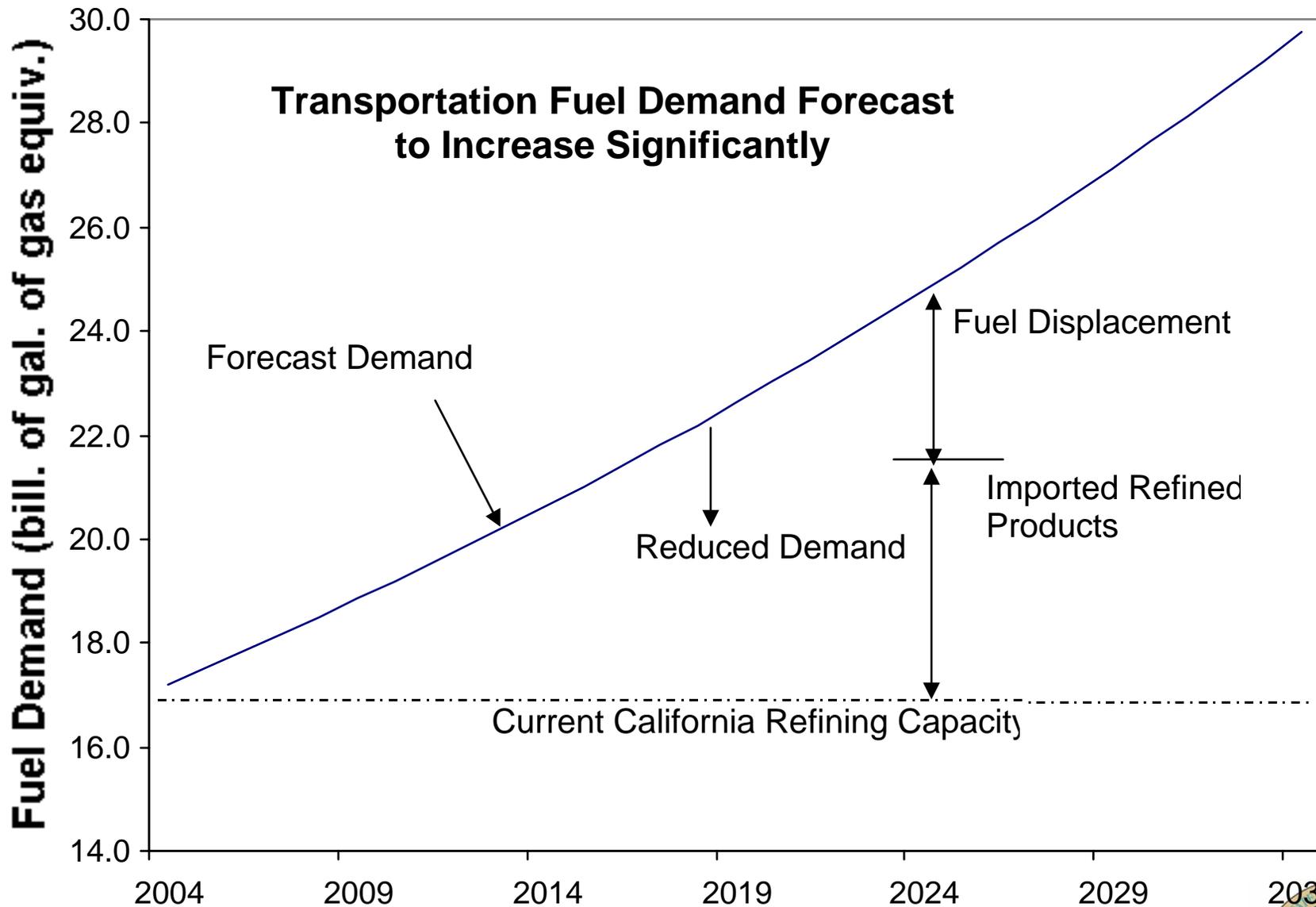
California's biomass resources can support 2 billion gallons per year and up to 3 billion gallons per year of biofuels by 2020.



Biomass-based fuels can contribute

Growing Fuel Demand



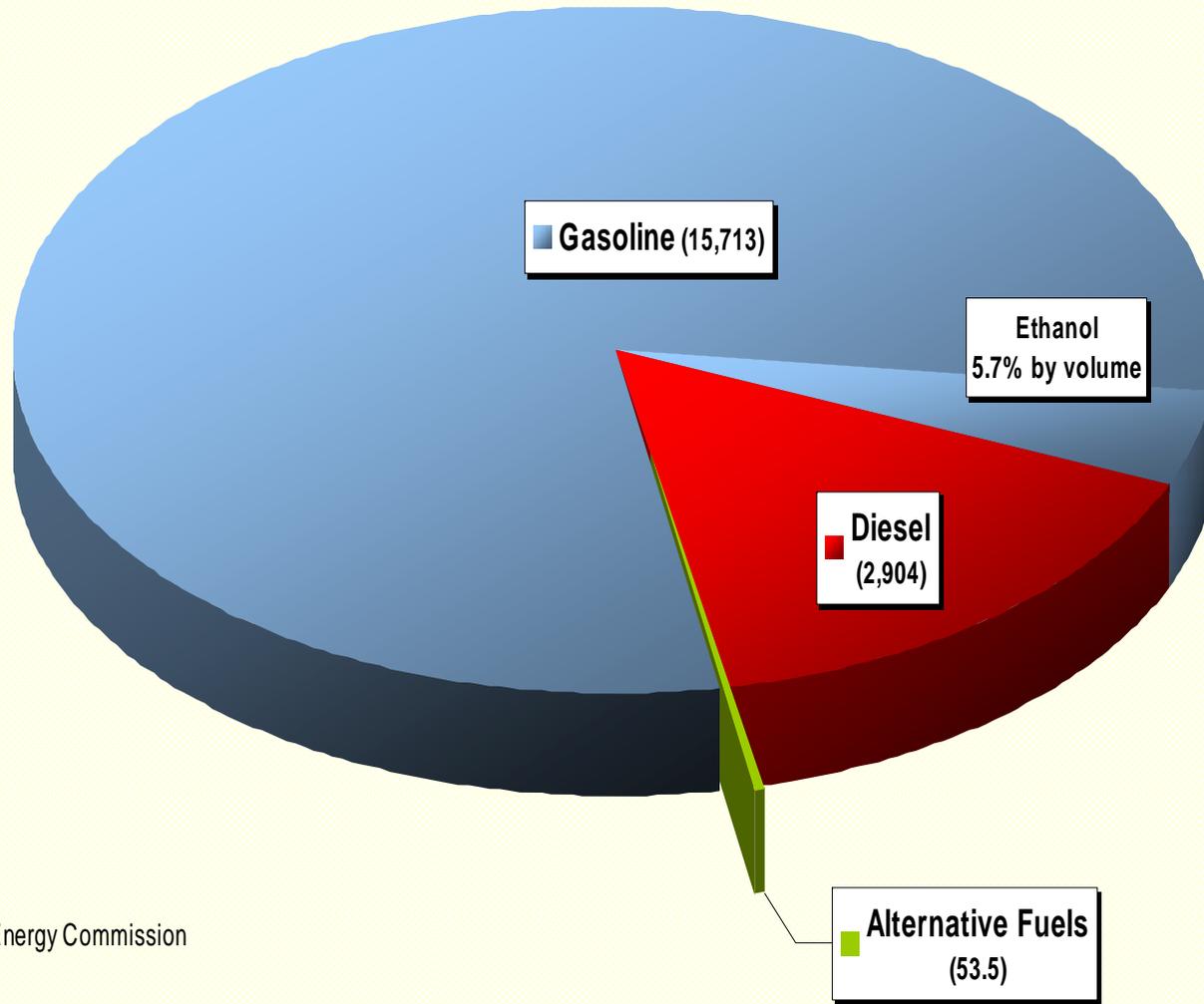


Source: Program Plan Overview; Michael D. Jackson of Arthur D. Little



California Petroleum and Alternative Fuel Demand - 2005

(millions of gallons)

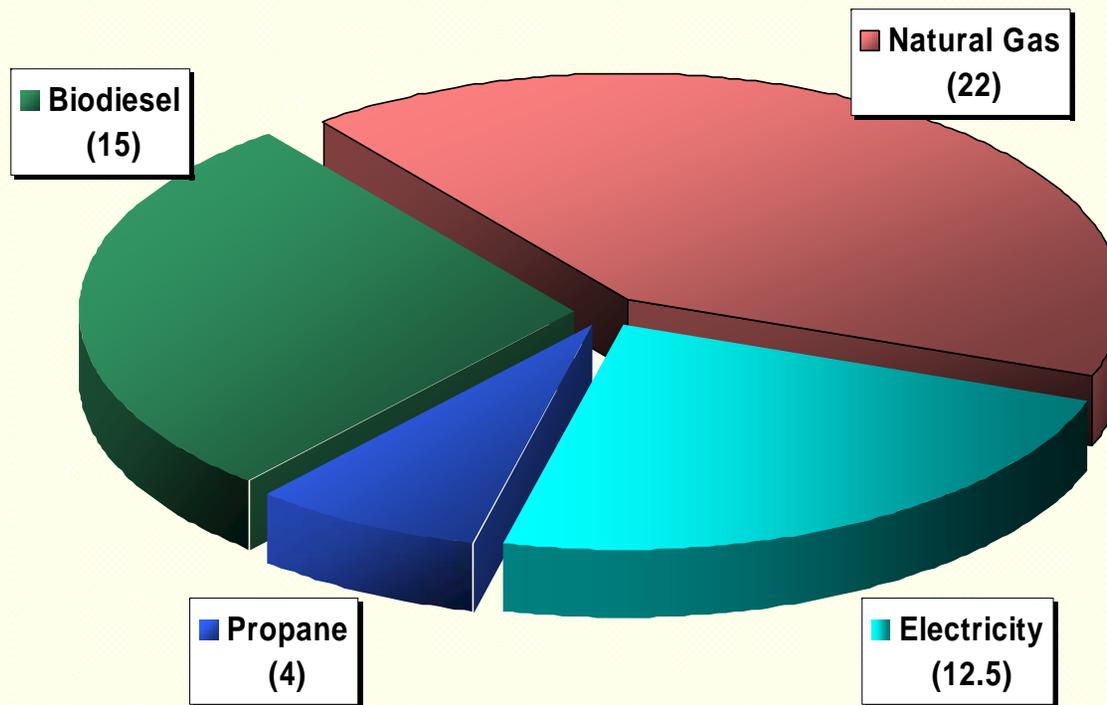


Source: California Energy Commission



California Alternative Fuels Demand - 2005

(millions of gallons of petroleum displaced)



Source: California Energy Commission



Biodiesel

Biodiesel production in California is growing, and reached 11.6 million gallons in 2006.



Biodiesel blends of up to 20 percent (B-20) are allowed under fuel specifications set by the California Air Resources Board.

Most vehicles can accept up to 5 percent biodiesel (B-5), using existing diesel engines.

Biodiesel qualifies as an “alternative fuel” which can meet federal fleet requirements under EPEAT.

Pure biodiesel (B-100) can be used in some engines without modification, although B-5, B-10 and B-20 blends are more common.

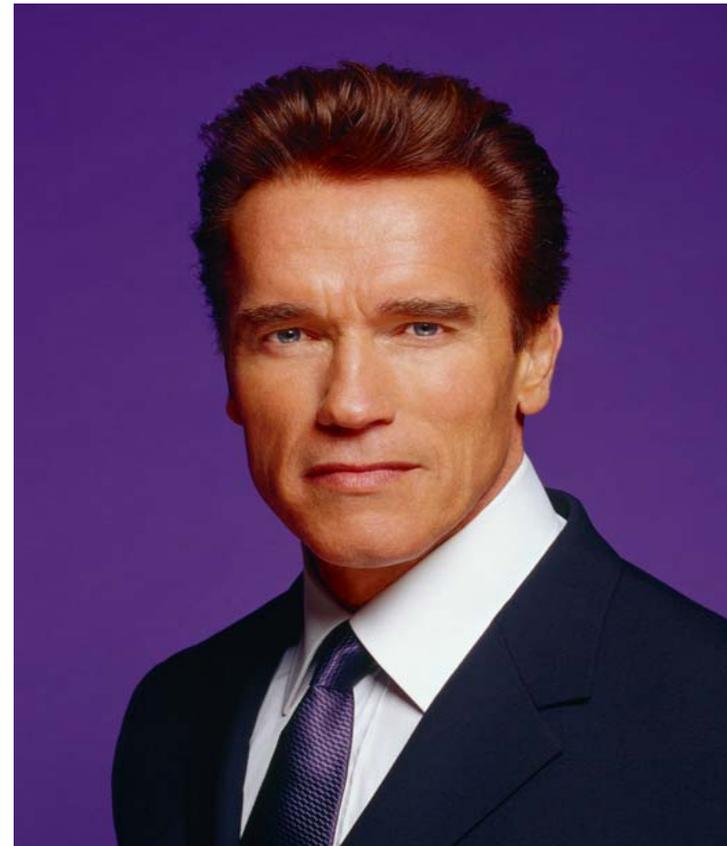


Governor Directs State Agencies to Expand Biofuels to Fight High Gasoline Prices

“It is critical that we do everything we can to reduce our dependence on petroleum based fuels. “

“Turning waste products into energy is good for the economy, local job creation and our environment.”

**---Governor Schwarzenegger
Sacramento, California
April 25, 2006**



Governor's Executive Order S-06-06

Established targets to increase in-state production and use of bioenergy, including ethanol and bio-diesel fuels made from renewable resources:

- **For biofuels**, the state shall produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050.
- **For biomass for electricity**, the state meet a 20 percent target within the established state goals for renewable generation for 2010 and 2020.



Bioenergy Interagency Working Group

- **Goals:**
 - Identify opportunities to advance biopower, biogas and biofuels;
 - Address regulatory and institutional barriers and propose solutions;
 - Create synergy and consistency through joint, state level efforts.
- **Membership:** California Energy Commission (Chair), California Public Utilities Commission, Department of Food and Agriculture, Air Resources Board, Department of Forestry and Fire Protection, State Water Resources Control Board and the California Integrated Waste Management Board.
- **Timing:** The Working Group began meeting regularly in May 2005; the Draft Consultant Report, *Recommendations for a Bioenergy Plan for California*, was the subject of a public workshop on March 9, 2006. The Working Group meets regularly to comply with E. O. S-06-06.



State Legislative Direction

The Governor signed Assembly Bill 1007 (Pavley, Chapter 371, Statutes of 2005) on September 29, 2005, requiring the Energy Commission to:

- Develop and adopt a State Plan to Increase the Use of Alternative Fuels no later than June 30, 2007.
- Work in partnership with the Air Resources Board and affected state agencies.
- The Energy Commission has a proceeding underway to complete the Plan.



AB 1007 Process

State plan to increase the use of alternative transportation fuels—the AB 1007 Alternative Fuels Plan

- Energy Commission will prepare a plan to reduce petroleum use
- Plan does not pick technology “winners” and “losers.”
- Plan will “provides a comprehensive framework for the state to ensure that all fuel and technology options are given an opportunity to compete in the California transportation market.”

Plan Scope:

- Evaluate fuels on full fuel-cycle assessment of emissions
- Set goals for 2012, 2017, 2022 for increased use of alternative fuels
- Recommend policies to ensure alternative fuel goals are attained, including:
 - ◆ Fuel and vehicle standards
 - ◆ Requirements and incentives to ensure vehicles use alternative fuels
 - ◆ Requirements and incentives to ensure fueling stations are available
 - ◆ Incentives and other encouragement for alternative fuel-capable vehicles including Research, Development and Demonstration projects.



Global Warming Solutions Act of 2006

On September 27, 2006, the Governor signed landmark legislation, Assembly Bill 32, the Global Warming Solutions Act of 2006.

California's initiative is intended to limit greenhouse gas emissions from the state's largest emitting sectors.

This landmark legislation, gives the California Air Resources Board significant, new responsibilities to:

- Adopt a statewide greenhouse gas (GHG) emissions limit;
- Adopt regulations to achieve "maximum feasible and cost-effective GHG reductions;
- Adopt market mechanisms, such as cap-and-trade programs;
- Establish mandatory reporting of GHG emissions by large emitting sectors and industries.



Key Questions to be Addressed

1. What are the air quality benefits of biodiesel?
2. What is the impact on engine performance and warranties?
3. What is an acceptable level of blending with conventional diesel?
4. What steps should be taken to enhance specifications for biodiesel?
5. What are the key factors affecting supply and costs?
6. What vehicle and supply test data and evaluations are needed going forward?
7. What policies should the AQMD pursue with regard to future use of biodiesel?

