
California Renewable Fuels Partnership

The Ethanol Future is Now

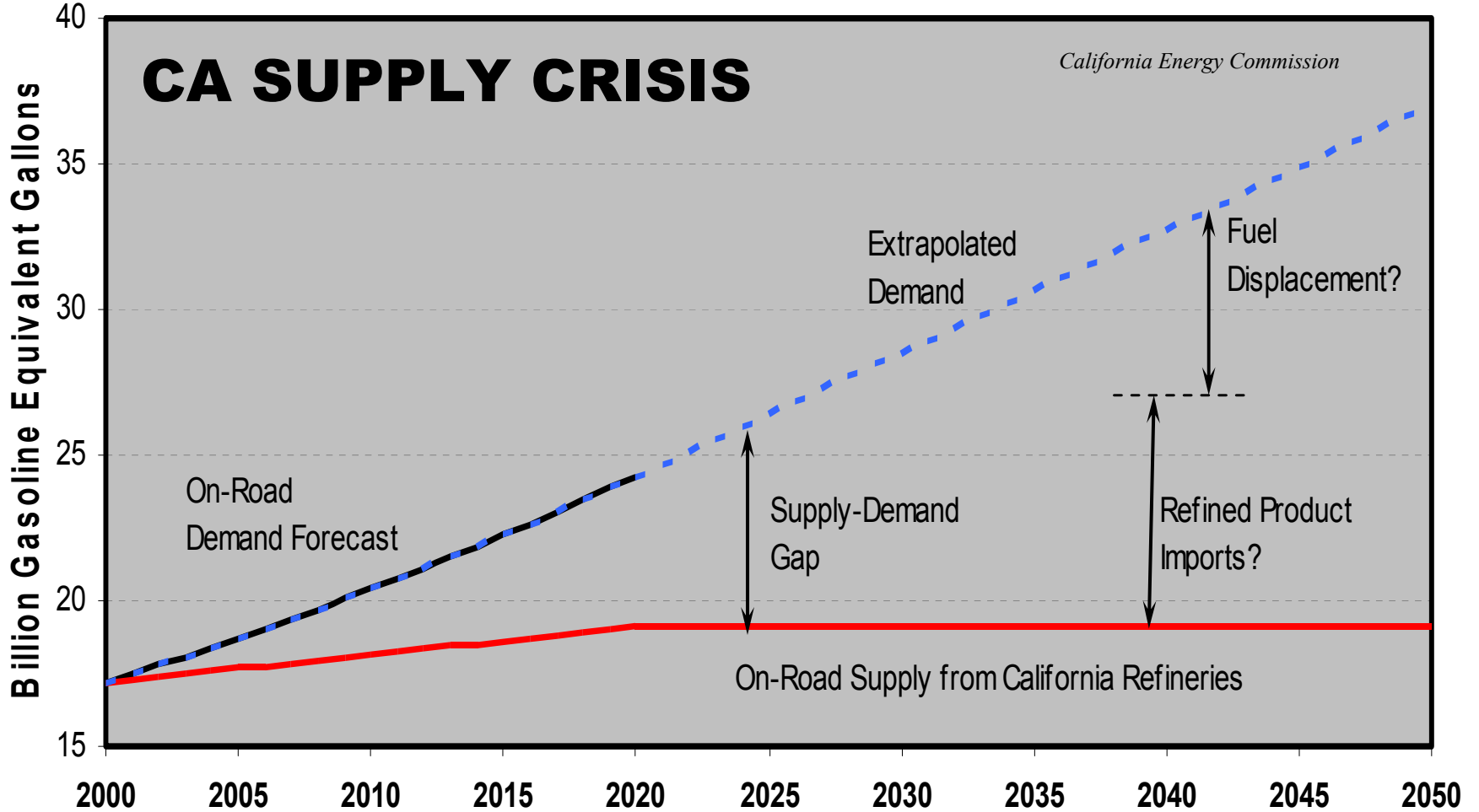
California Biomass Collaborative Forum
Sacramento, CA
March 1, 2005

The Ethanol Future is Now

Ethanol Advantage: Supply, Jobs, and CO₂

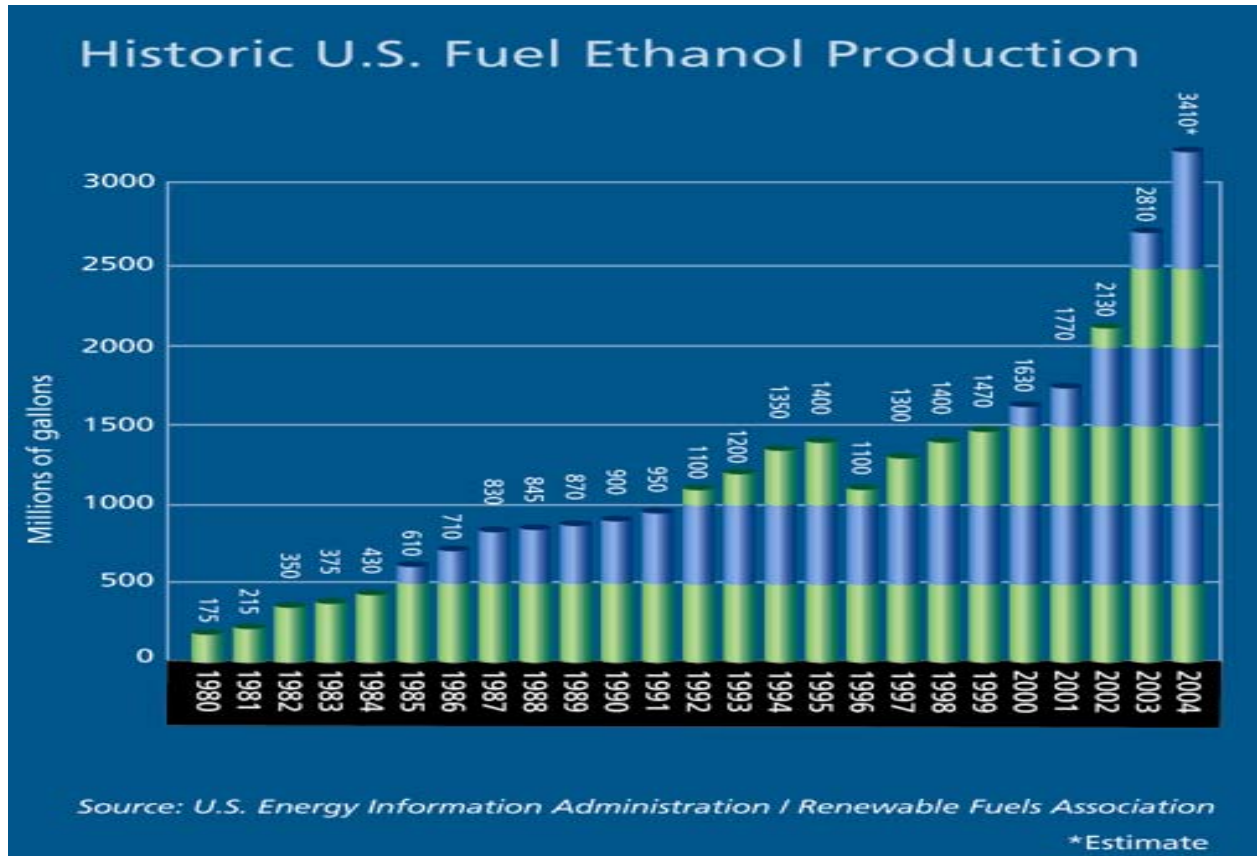
- ★ CA Gasoline Supply Crisis – Supply is limited and getting worse.
 - 10% ethanol adds critically needed volume immediately.
 - Ethanol helps *reduce gasoline prices* by increasing supply with a product that has been consistently *cheaper* than California gasoline.
- ★ Jobs – Ethanol is a job creator of major proportions. 7000 new jobs and \$600 million capital investment at stake in near term.
- ★ Climate Change 10% ethanol can reduce over 5.4 million tons/yr of CO₂ *today* in California.

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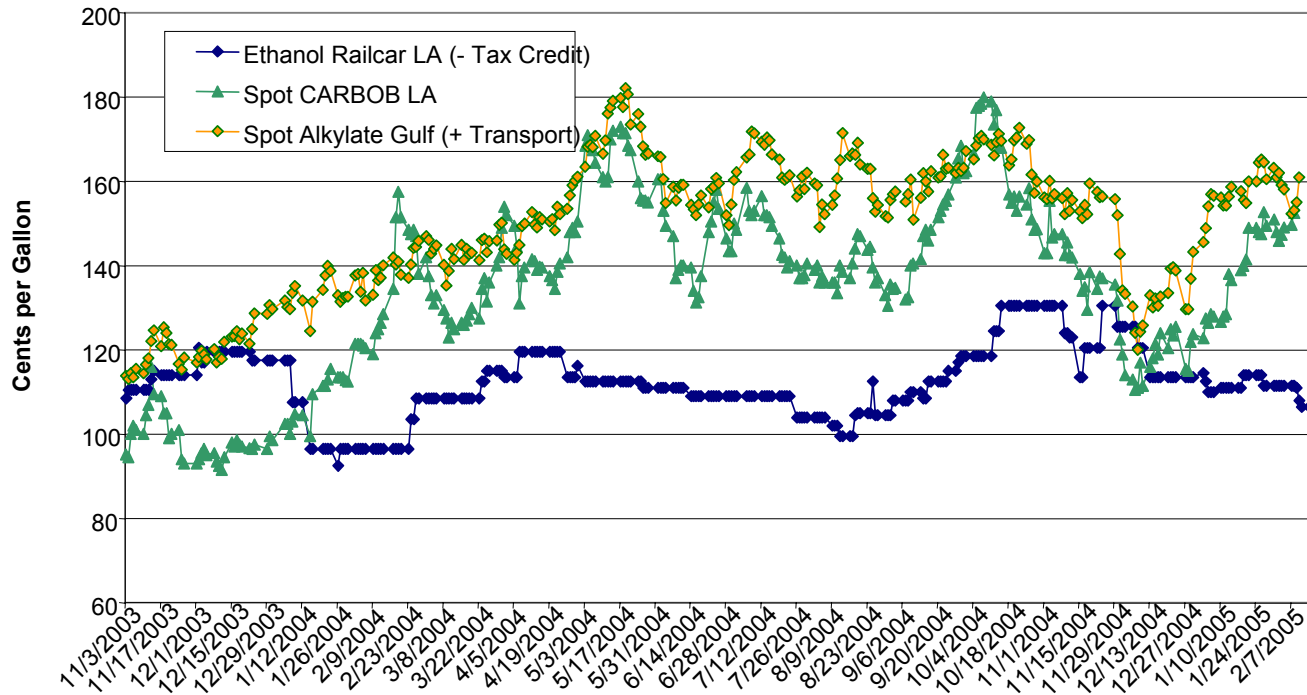
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Ethanol: the world's fastest growing transportation fuel



Gasoline and Ethanol Prices: A Dilemma

Recent California Reformulated Gasoline Component Prices



Notes Ethanol railcar prices are from Platts, and are average prices for prompt Southern California shipments including 52 c/gal federal tax credit (51 c/gal after 1/1/05). Alkylate prices are calculated from Platts and include 20 c/gal transportation & distribution cost from Gulf Coast to California. Spot wholesale prices for regular-grade California reformulated gasoline blendstock for oxygenate blending (CARBOB) are from US DOE. Data from 11/3/03 to 2/14/05.

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83 Plants – 3.7 Billion Gallons

16 Plants under construction 700 M Gallons



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Ethanol Market Overview

- ★ Global Fuel Ethanol Production
 - 10 billion gallons in 2004
- ★ United States Fuel Ethanol Production
 - 3.4 billion gallons in 2004
 - 4.0 billion gallons projected 2005
- ★ California Fuel Ethanol Market
 - 125 million gallons in 2001
 - 650 million gallons in 2003
 - 900 million gallons in 2004

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Six to Eight California Projects in Advanced Stages of Development

- ★ South, Central and Northern California
- ★ Three projects have fully permitted sites
- ★ One project in construction
- ★ Phase 1 combined capacity of around 400 million gallons per year
- ★ Cellulose R&D incorporated in projects

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A Bright Future for Cellulose

- ★ Enzyme, Acid and Gasification technologies all advancing.
- ★ Multi-technology adds diversity, competition and increased feedstock compatibility.
- ★ California has a wide variety of waste and primary resources for ethanol production.

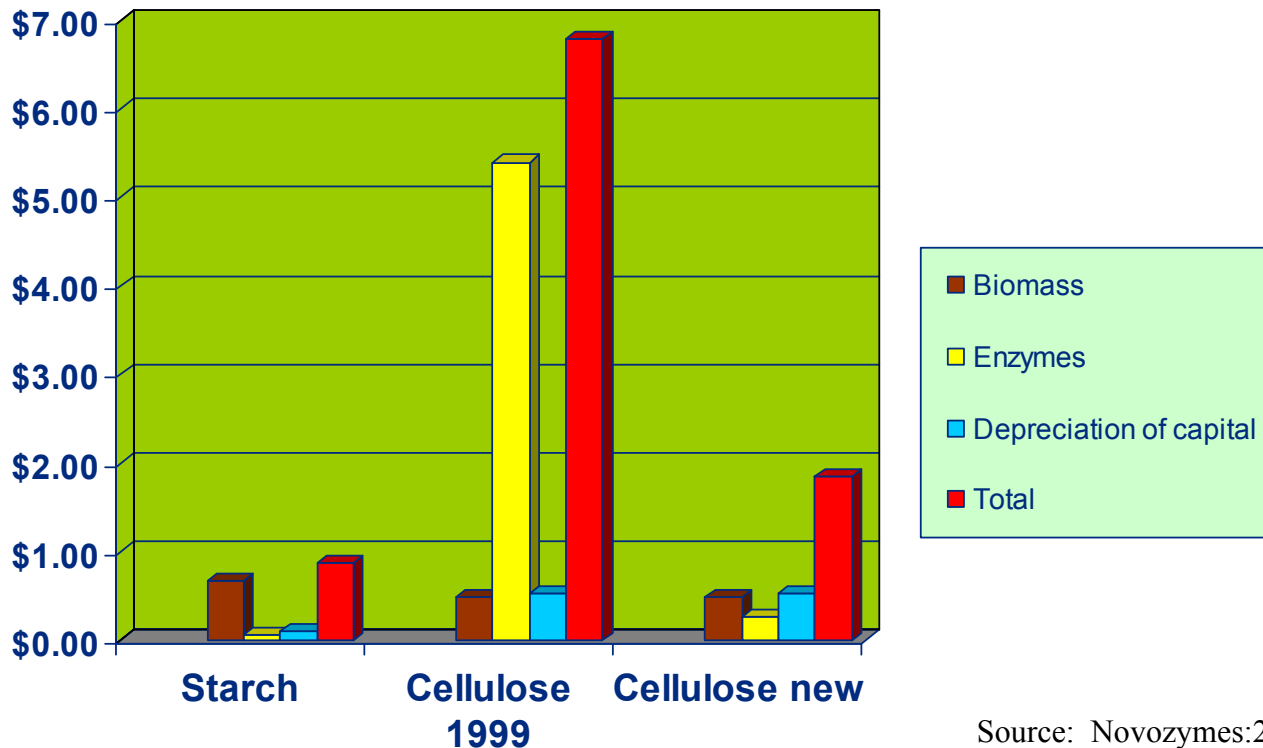
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Barriers to Cellulose Ethanol

- ★ Higher cost
- ★ Technology risks
- ★ Market uncertainty
- ★ Lack of coherent governmental policies

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Cellulose cost comparison after recent achievements: Grain vs. biomass in USD/gallon ethanol.



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Market Future is Now

- ★ E10 Blends - immediate supply solution
- ★ Neater Blends of E11%-95% - flex vehicles
- ★ Ethanol as renewable source of hydrogen
- ★ Ethanol in Biodiesel production

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Market needs

- ★ Conservation
- ★ Open competition for fuels
- ★ Diversification of supply
- ★ Fungibility

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Key Policy Actions Needed Now

- ★ Optimize CARFG for E10.
- ★ Adjust regulations for 5.7% to 95% ethanol blends to assure full market fungibility.
- ★ Adopt a California renewable fuels standard
- ★ Flex fuel requirements on all new vehicles.
- ★ Conduct coordinated CA campaign for federal cellulose demo plants.



**Ethanol and Other Biofuels are Key
Components to California's
Transportation Future.**

CALIFORNIA RENEWABLE FUELS
PARTNERSHIP