



COST ANALYSIS OF COLORADO WINTER OXYGENATED FUELS PROGRAM

ETHANOL MANAGEMENT COMPANY

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OVERVIEW OF STUDY

- **TO EVALUATE ECONOMIC IMPACT OF ELIMINATING THE WINTER OXYGENATED FUELS PROGRAM IN COLORADO**

Will the price of gasoline increase, decrease, or be unchanged?

Will refiners continue to blend ethanol into gasoline?

What is the actual cost to consumers of the Oxyfuels Program?

- **APPROACH**

Compare Colorado gasoline supply/demand balance with and without Oxyfuels Program

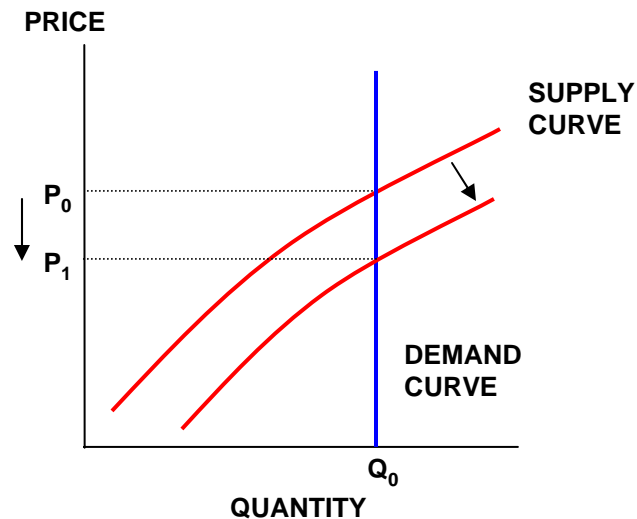
Based on gasoline supply costs for refiners supplying market

Estimate effect of Oxyfuels Program on prices and cost to consumers

- **BASED ON WINTER 2004/2005 MARKET CONDITIONS**

APPROACH

APPLICATION OF SUPPLY/DEMAND THEORY TO COMMODITY FUEL MARKETS



Demand Curve – for gasoline, consumers’ demand tends to stay the same even if price increases (at least in the short term). As a result, the demand curve is nearly a vertical line.

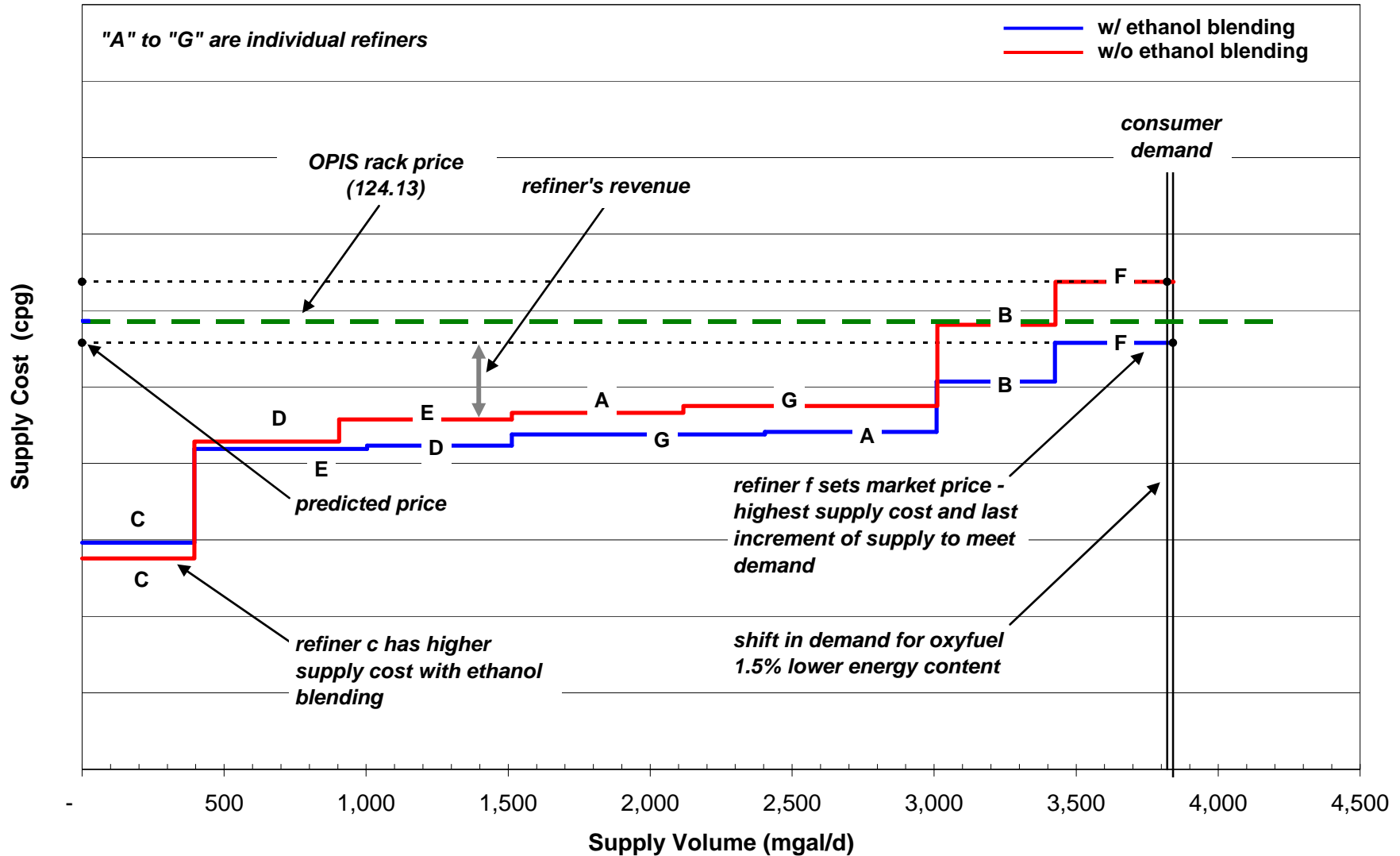
Supply Curve – assumes that producers will supply gasoline as long as the price received at least covers the cost of supply. The supply curve represents the sum of incremental volumes of gasoline that refiners are willing to supply based on fuel price and their supply costs.

Intersection – represents the price which just balances the quantity of gasoline that refiners are willing to supply with the quantity consumers are willing to buy. The refiner with the highest supply cost that supplies the last increment to meet demand is operating at breakeven.

IF ELIMINATING THE OXYFUELS PROGRAM LOWERS ALL REFINERS’ SUPPLY COSTS, THE MARKET PRICE WOULD BE EXPECTED TO FALL FROM P_0 TO P_1 . HOWEVER, MOST REFINERS IN 2004-2005 HAD LOWER SUPPLY COSTS FOR ETHANOL BLENDED GASOLINE, SO MARKET PRICE WOULD HAVE BEEN UNCHANGED.

SUPPLY COST ANALYSIS FOR WINTER 2004-2005

REGULAR GASOLINE



- Predicted price is nearly equal to OPIS rack price supporting theory and methodology.
- Refiner F sets market price and has economic incentive to blend ethanol - conclude eliminating Program would not have changed price.
- Expect Refiner C would have eliminated ethanol blending decreasing oxyfuel supplied to the Program area.

COST OF OXYFUELS PROGRAM TO CONSUMERS

- **GASOLINE PRICES NOT HIGHER WITH PROGRAM**

Price set by refiner supplying last increment to meet demand (refiner F in example)

Refiner supplying last increment had incentive to blend ethanol

Changes in market prices unlikely if program was eliminated

- **ONLY COST DUE TO REDUCED FUEL EFFICIENCY**

Program resulted in more oxyfuel and less conventional being supplied

Increase in demand of 5,300 gal/day based on 1.5% reduction in oxyfuel efficiency

Increase in demand costs consumers about 24/100 of one cent-per-gallon based on predicted market prices or about 10 cents-per-month for an average driver

Cost analysis does not account for federal ethanol tax credit

- **OXYFUEL PRODUCTION DECLINES W/O PROGRAM**

Eliminating Program resulted in a 12.5% decrease in oxyfuel supplied to Program area