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OIL AND GAS ANALYSTS AND FORECASTERS

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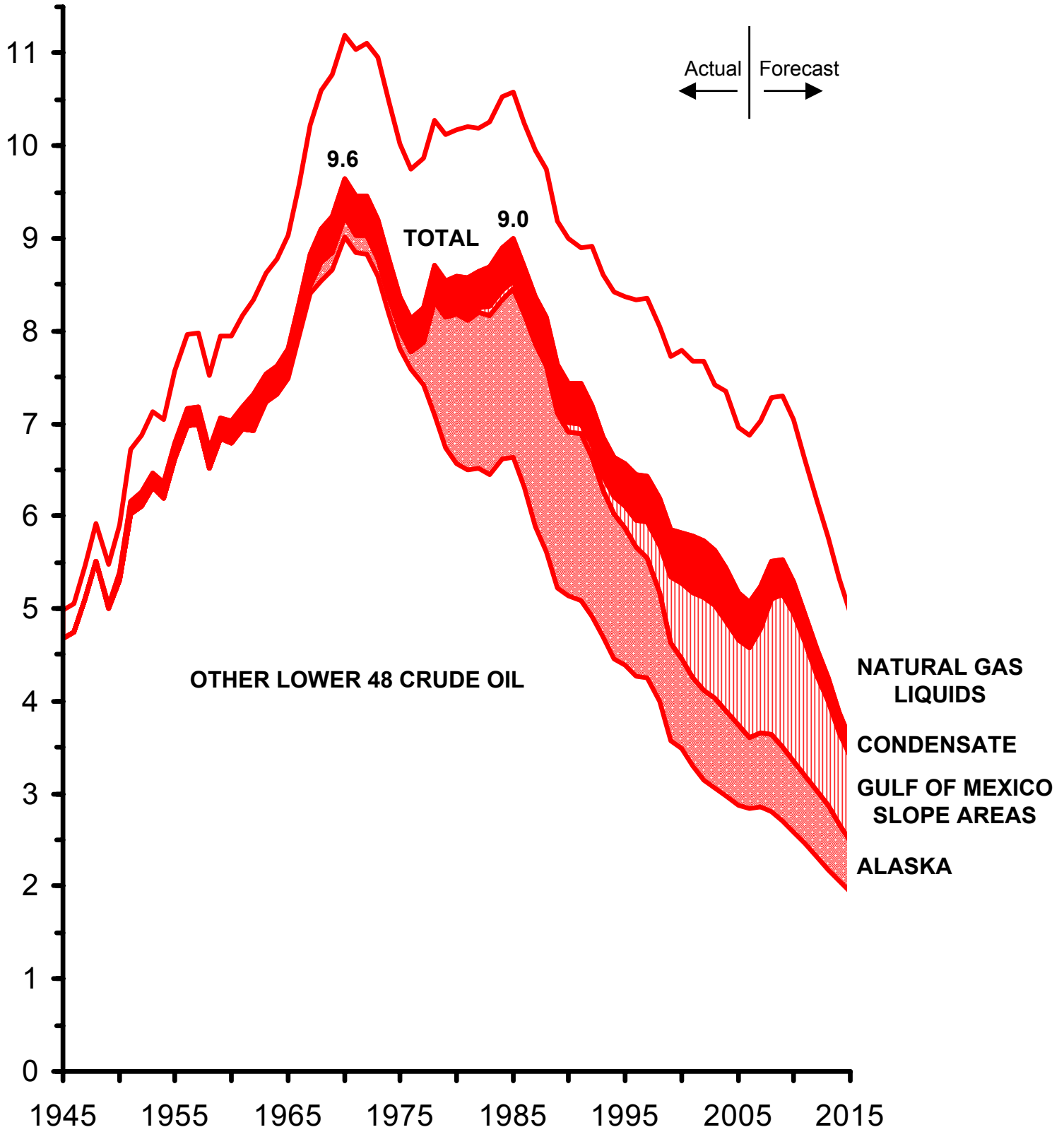
OUTLOOK FOR OIL AND GAS

Presentation To

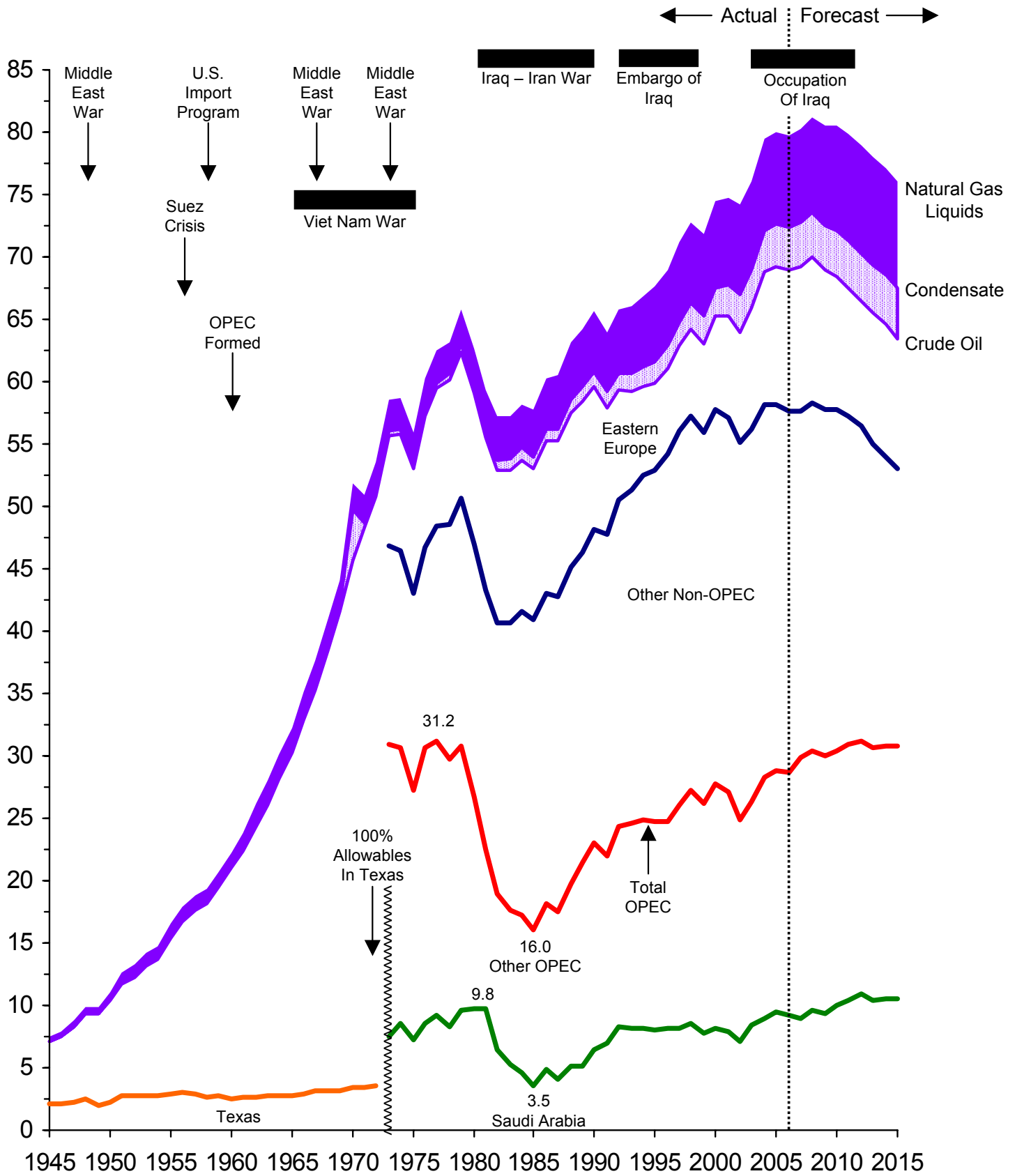
KANSAS INDEPENDENT OIL & GAS ASSOCIATION

August 20, 2007

**FIGURE 1
UNITED STATES PRODUCTION
Million Barrels Per Day**



**FIGURE 2
WORLD OIL PRODUCTION
Million Barrels Per Day**



**FIGURE 3
NON-OPEC CRUDE OIL PRODUCTION
Million Barrels Per Day**

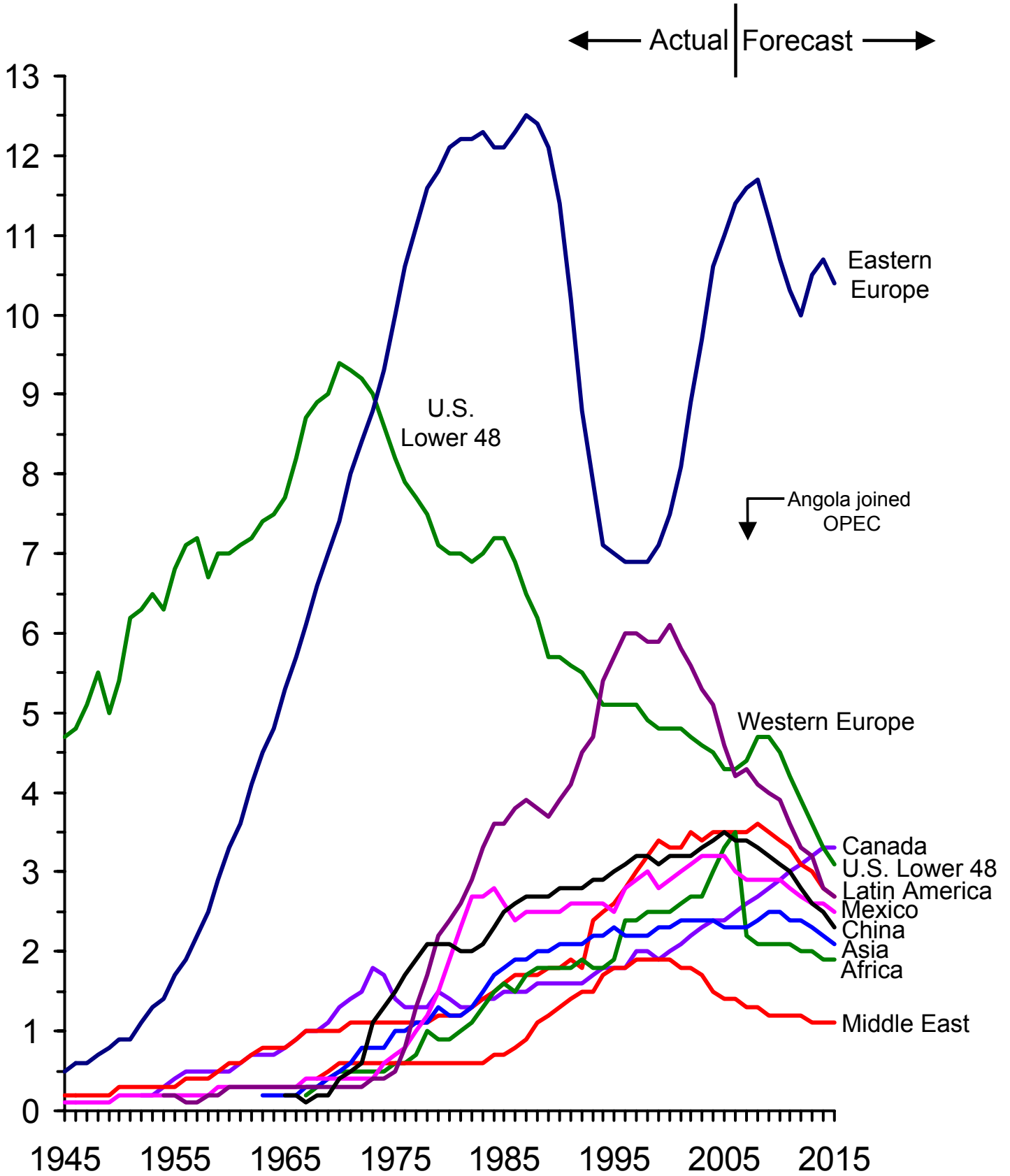


FIGURE 4
WORLD PETROLEUM DELIVERIES
Million Barrels Per Day

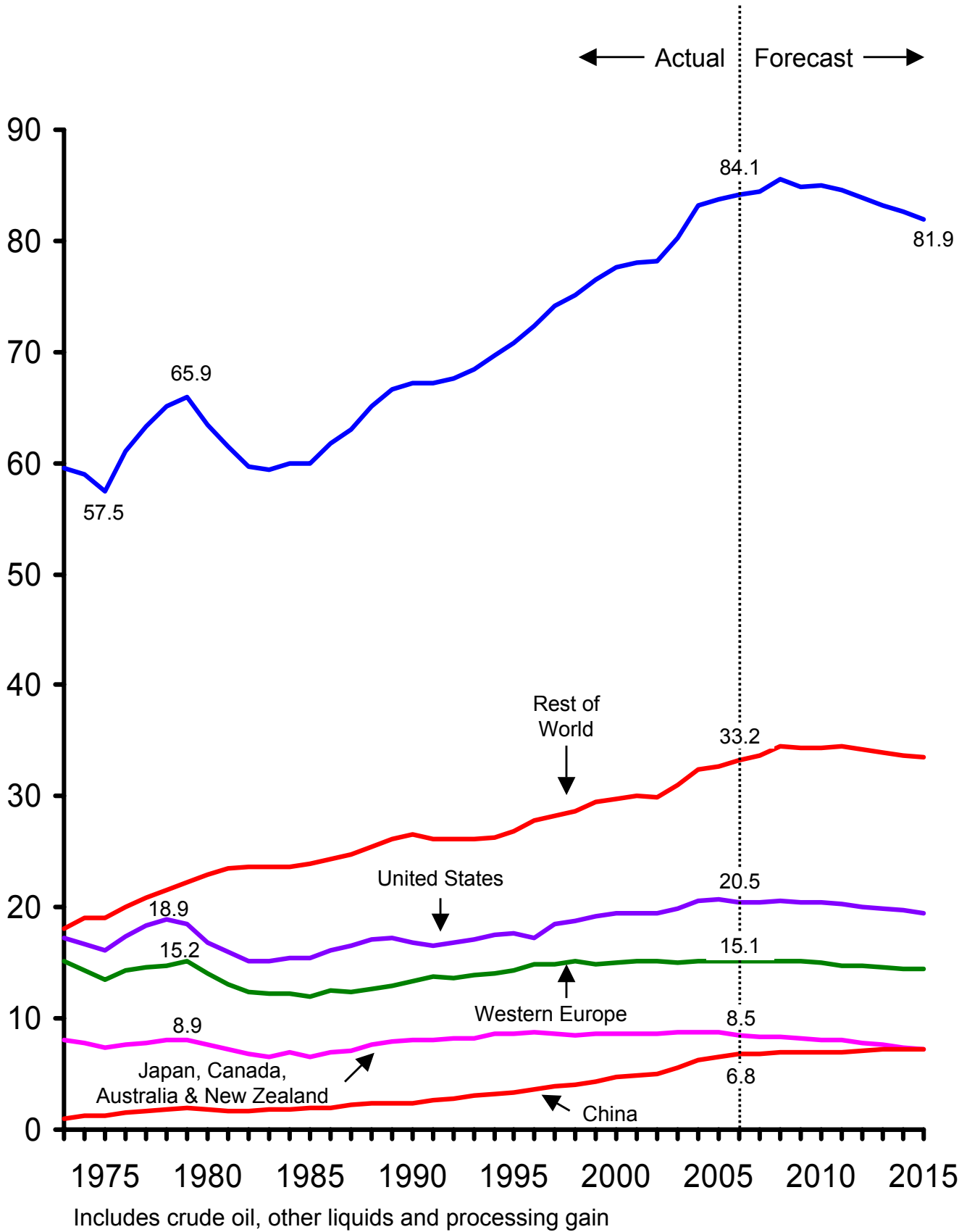
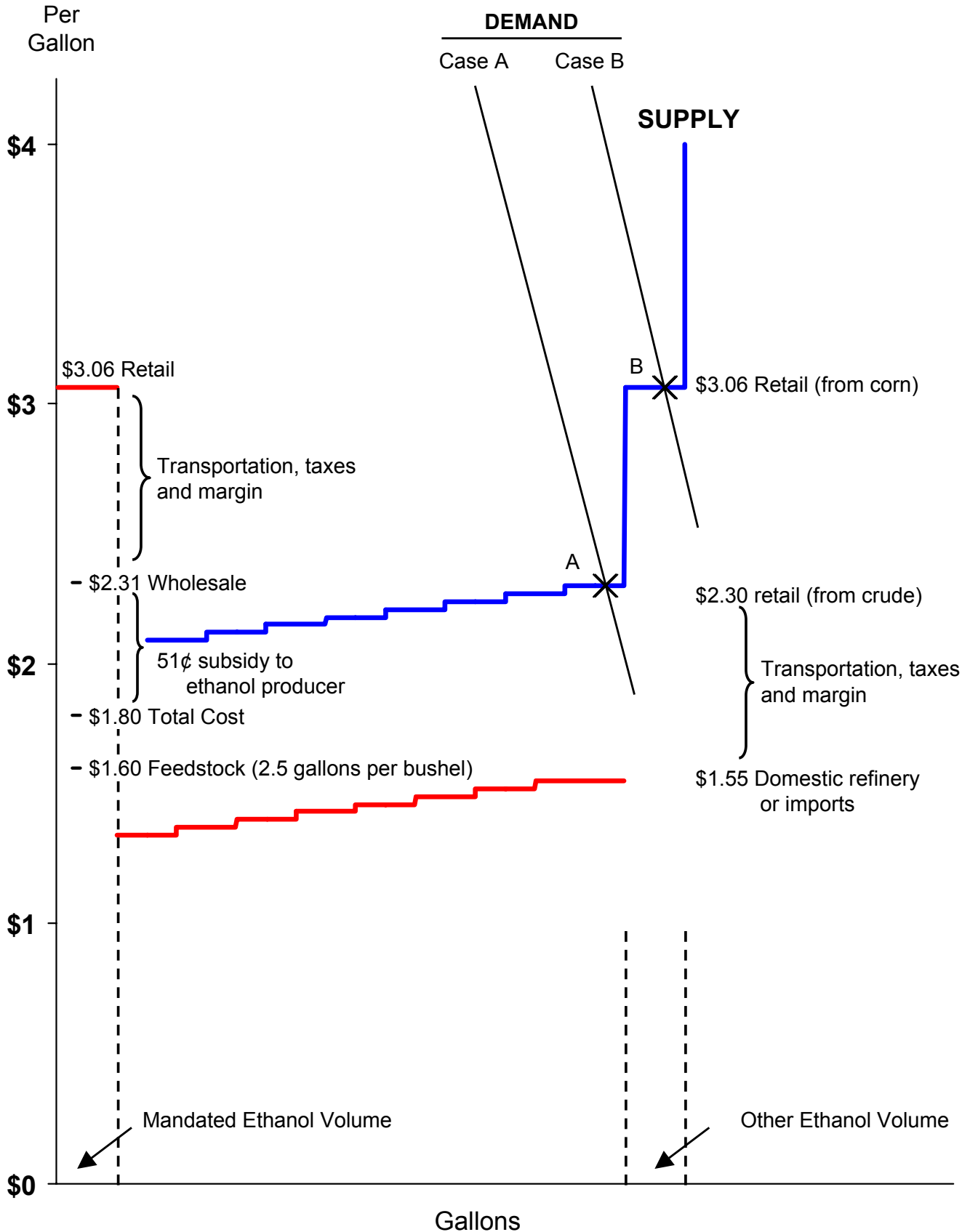


FIGURE 5
UNITED STATES GASOLINE MARKET

Crude Oil: \$60 per barrel
Corn: \$4 per bushel



**FIGURE 6
UNITED STATES GASOLINE MARKET**

Crude Oil: \$70 per barrel
Corn: \$3 per bushel

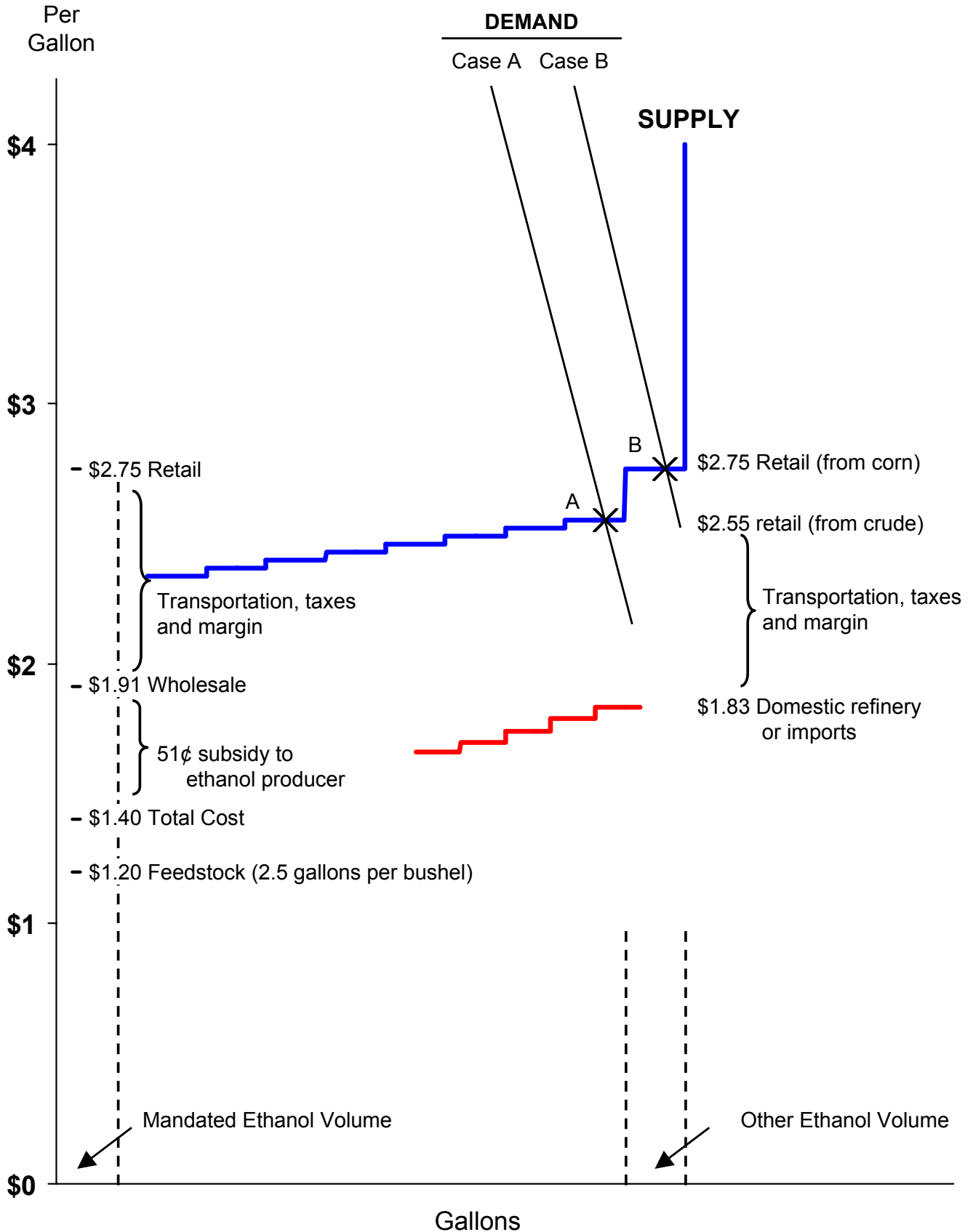


FIGURE 7
OCTANE, ETHANOL, AND GASOHOL

Octane: 1 gallon C_8H_{18} (5.9 pounds) + O_2 (20.6 pounds) \longrightarrow H_2O (8.3 pounds) + CO_2 (18.2 pounds)

E-alcohol: 1 gallon C_2H_6O (6.6 pounds) + O_2 (13.8 pounds) \longrightarrow H_2O (7.8 pounds) + CO_2 (12.6 pounds)

Gasohol: 1 gallon (6.0 pounds) + O_2 (19.9 pounds) \longrightarrow H_2O (8.2 pounds) + CO_2 (17.7 pounds)
 (90/10)

Gross Heating Value

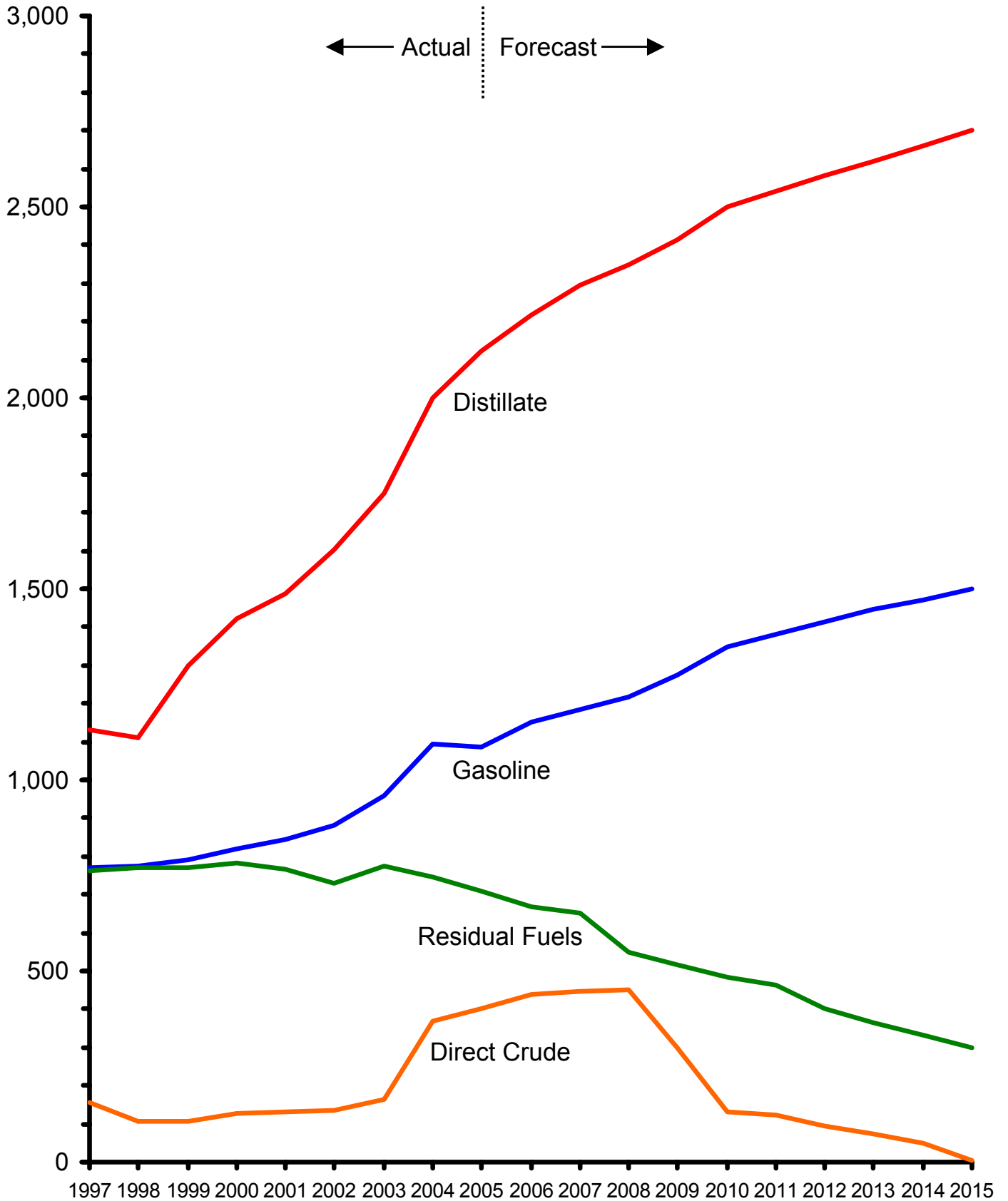
	<u>BTU Per Gallon</u>
Octane	121,393
E-alcohol	84,515
Gasohol	117,705
For same BTU as octane:	$\frac{121,393}{84,515} = 1.44$ gallons E-alcohol
	$\frac{121,393}{117,705} = 1.03$ gallons Gasohol

1 gallon Octane = 18.2 pounds CO_2

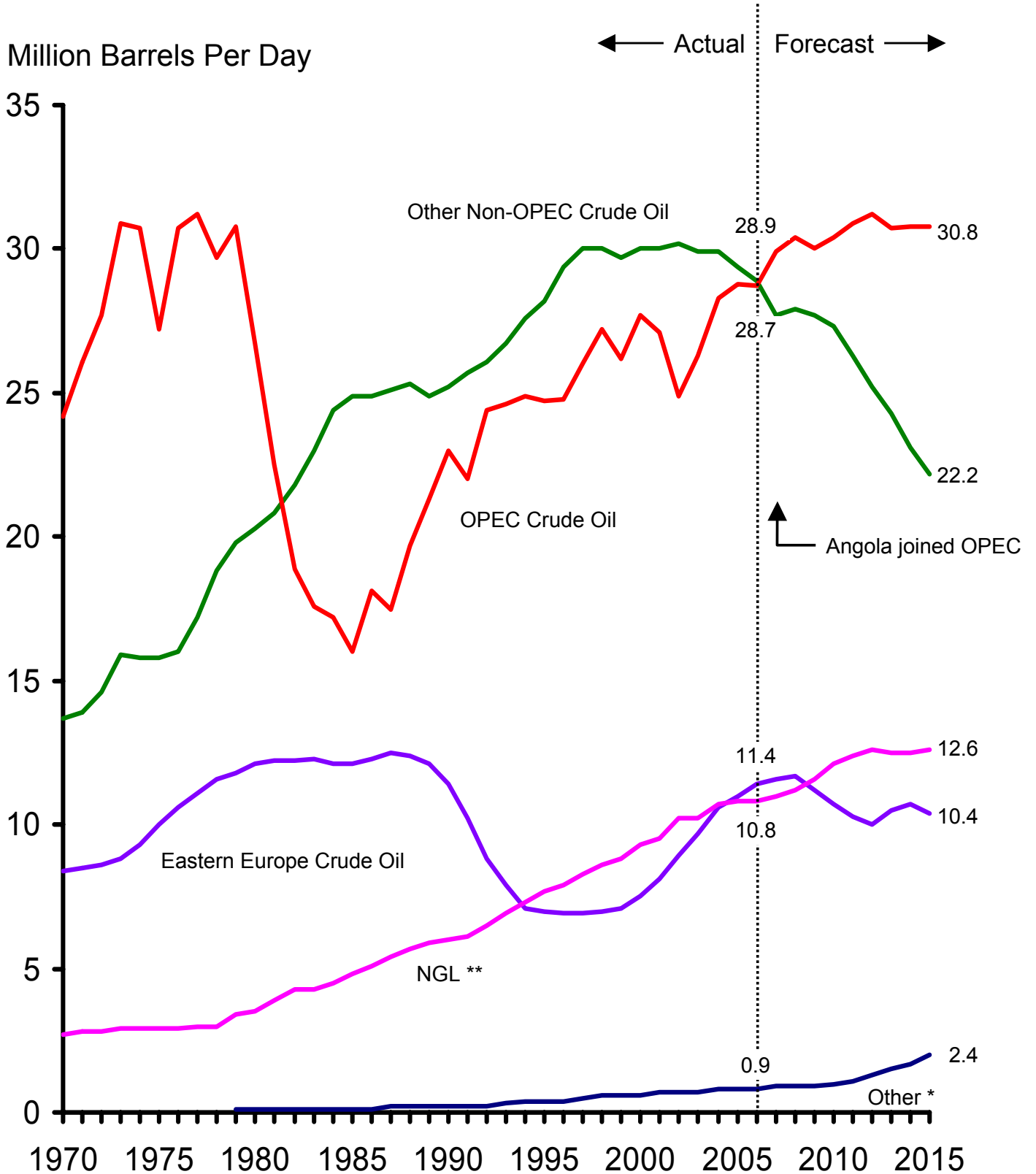
1.44 gallons E-alcohol = 18.1 pounds CO_2 (1.44 x 12.6)

1.03 gallons Gasohol = 18.2 pounds CO_2 (1.03 x 17.7)

FIGURE 8
OIL DELIVERIES IN CHINA
Thousand Barrels Per Day



**FIGURE 9
WORLD OIL PRODUCTION**



* alcohols, coal liquefaction, and gas to liquids
 ** condensate, natural gasoline, butanes, propane, and ethane

FIGURE 10
INDUSTRIAL NATURAL GAS AND ELECTRICITY

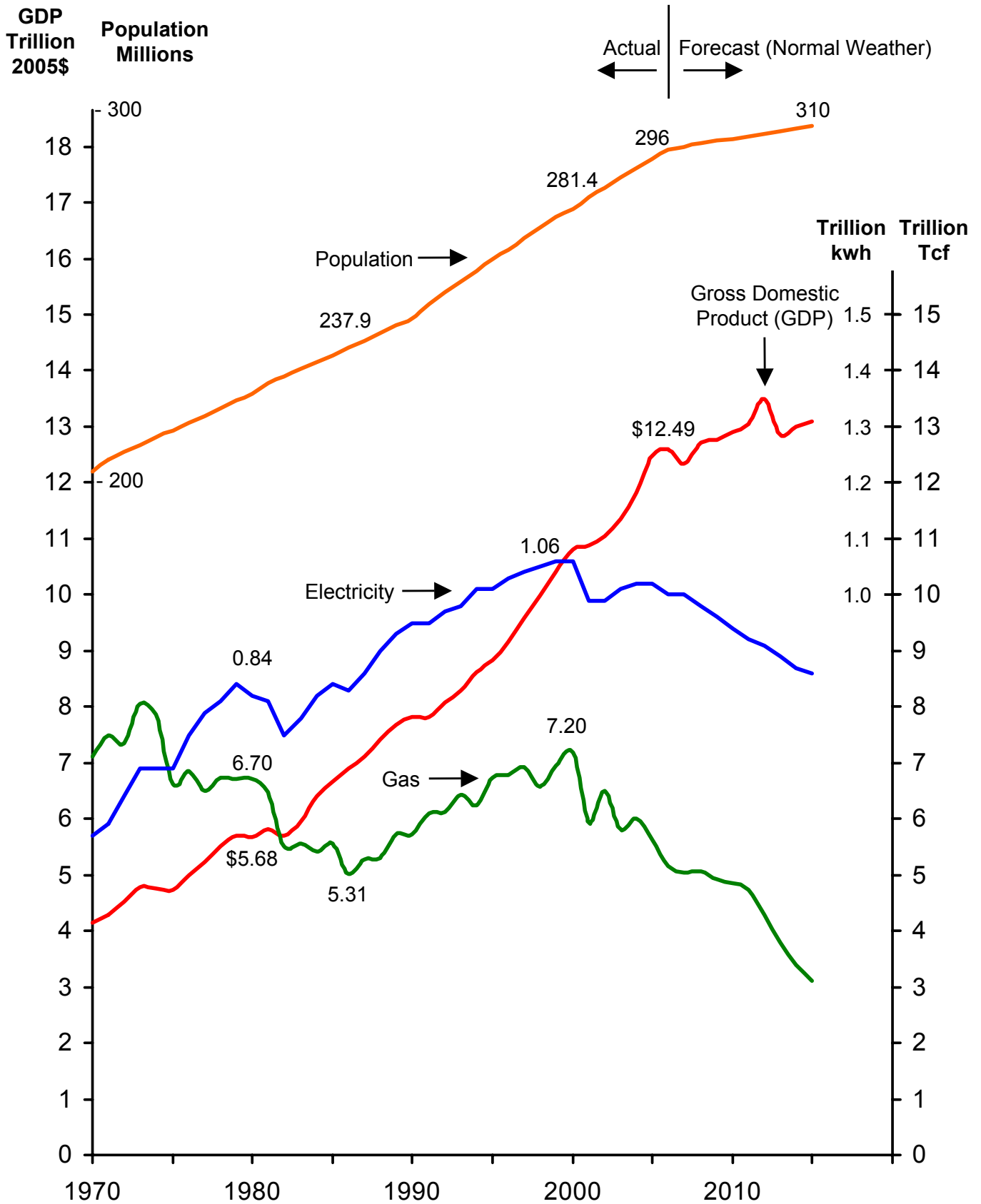
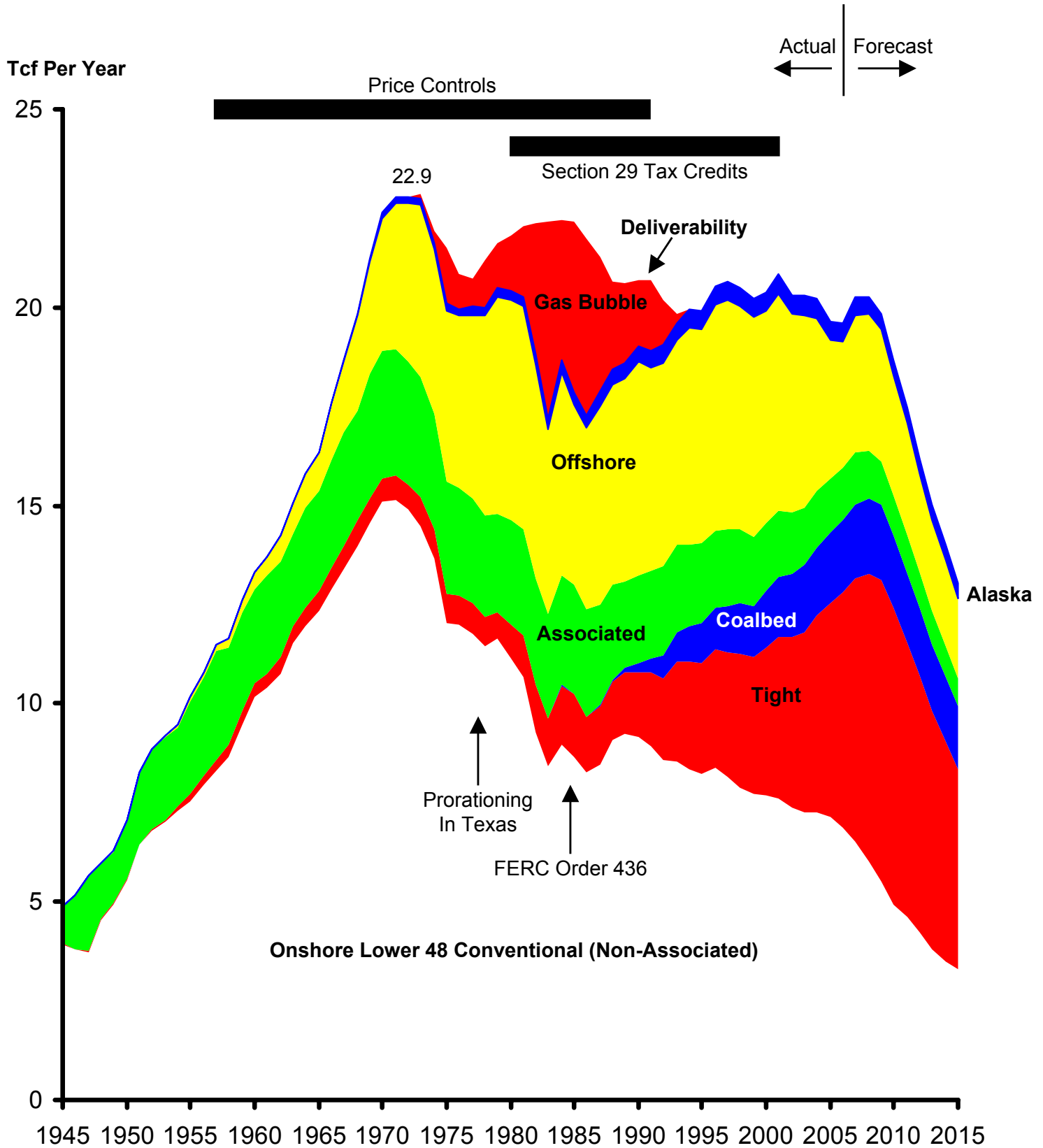


FIGURE 11
UNITED STATES NATURAL GAS PRODUCTION



**FIGURE 12
WORLD LNG**

Billion Cubic Feet Per Day

2005

2015

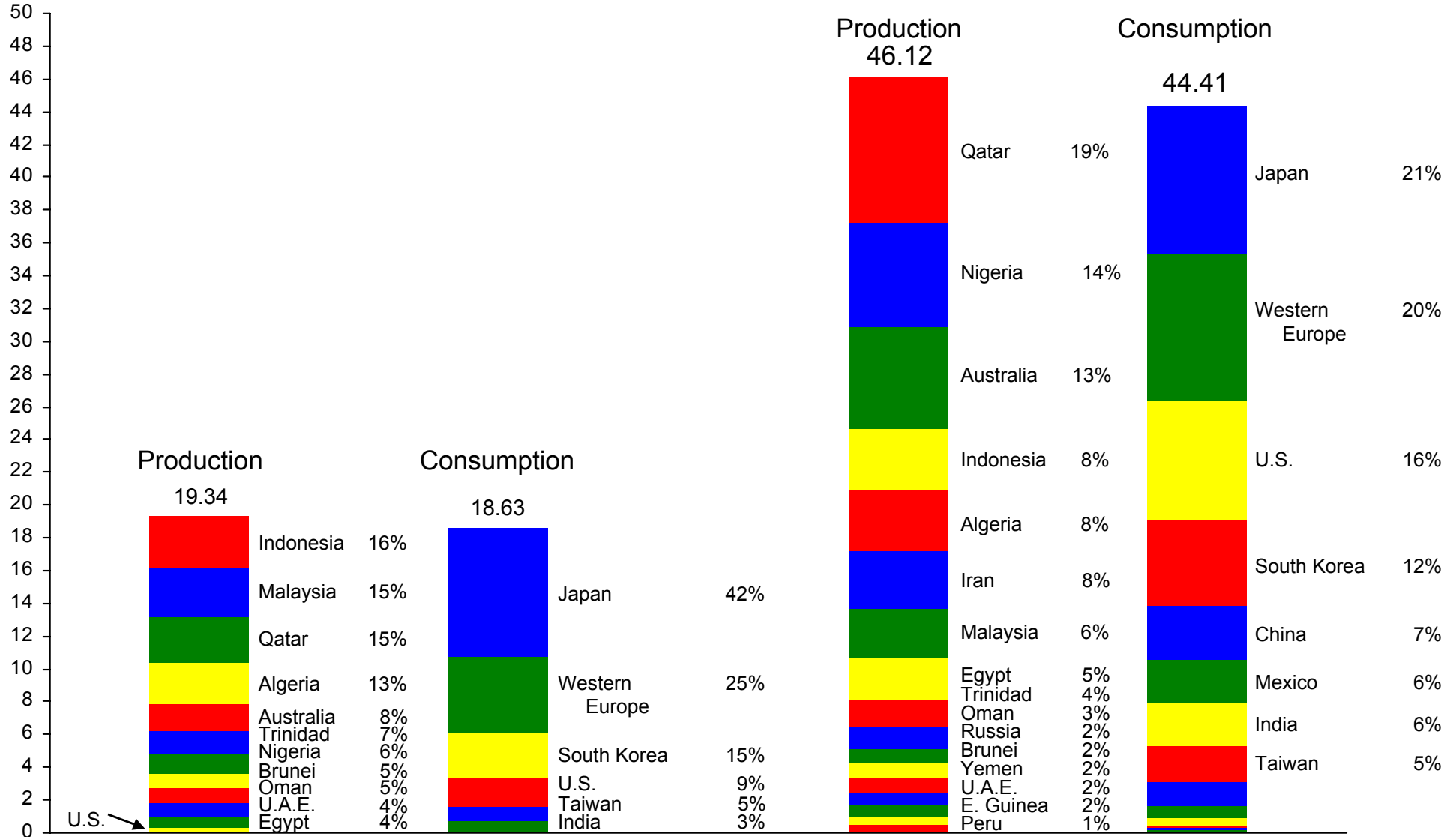


FIGURE 13
UNITED STATES NATURAL GAS CONSUMPTION
Billion Cubic Feet Per Day

