



Natural Gas For Electricity Generation in the U.S. – Issues and Trends

Benjamin Schlesinger, Ph.D.

Benjamin Schlesinger and Associates, Inc. (BSA)

Bethesda, Maryland

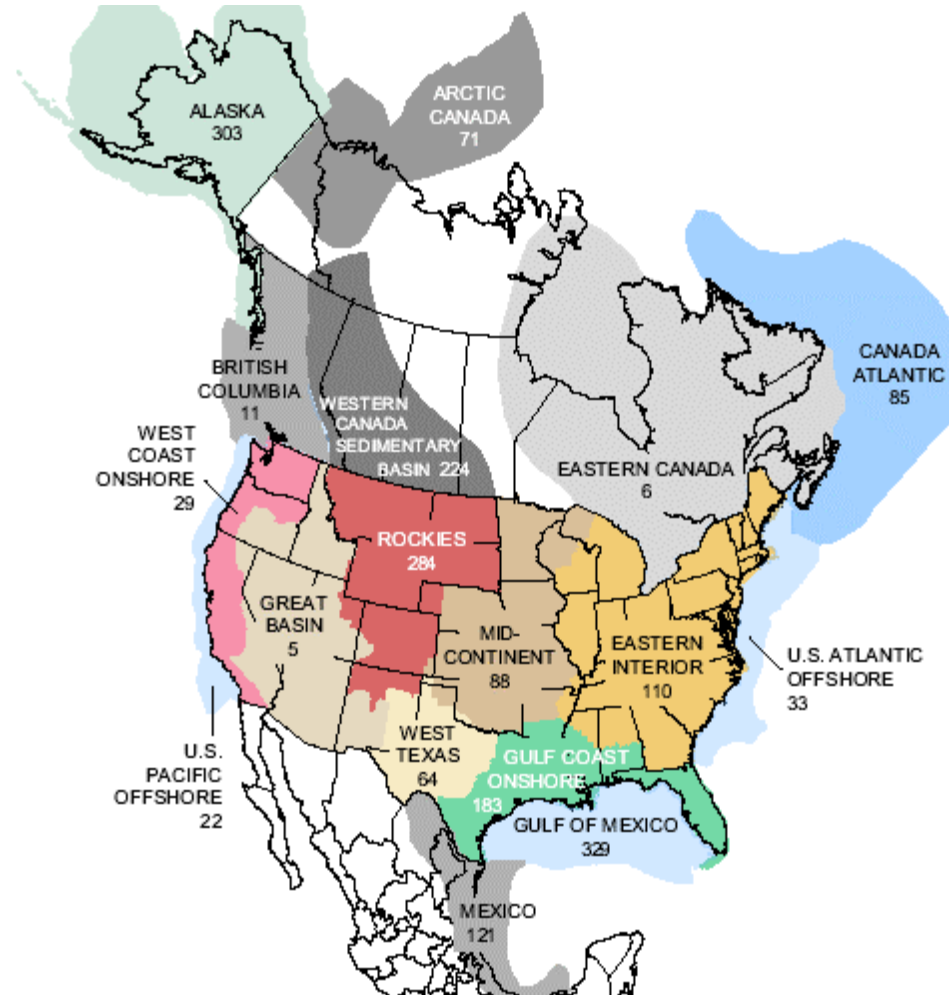
Round Table on “Gas to Power”

**16th Annual Session of the UNECE Working Party on Gas
Geneva – January 24, 2006**

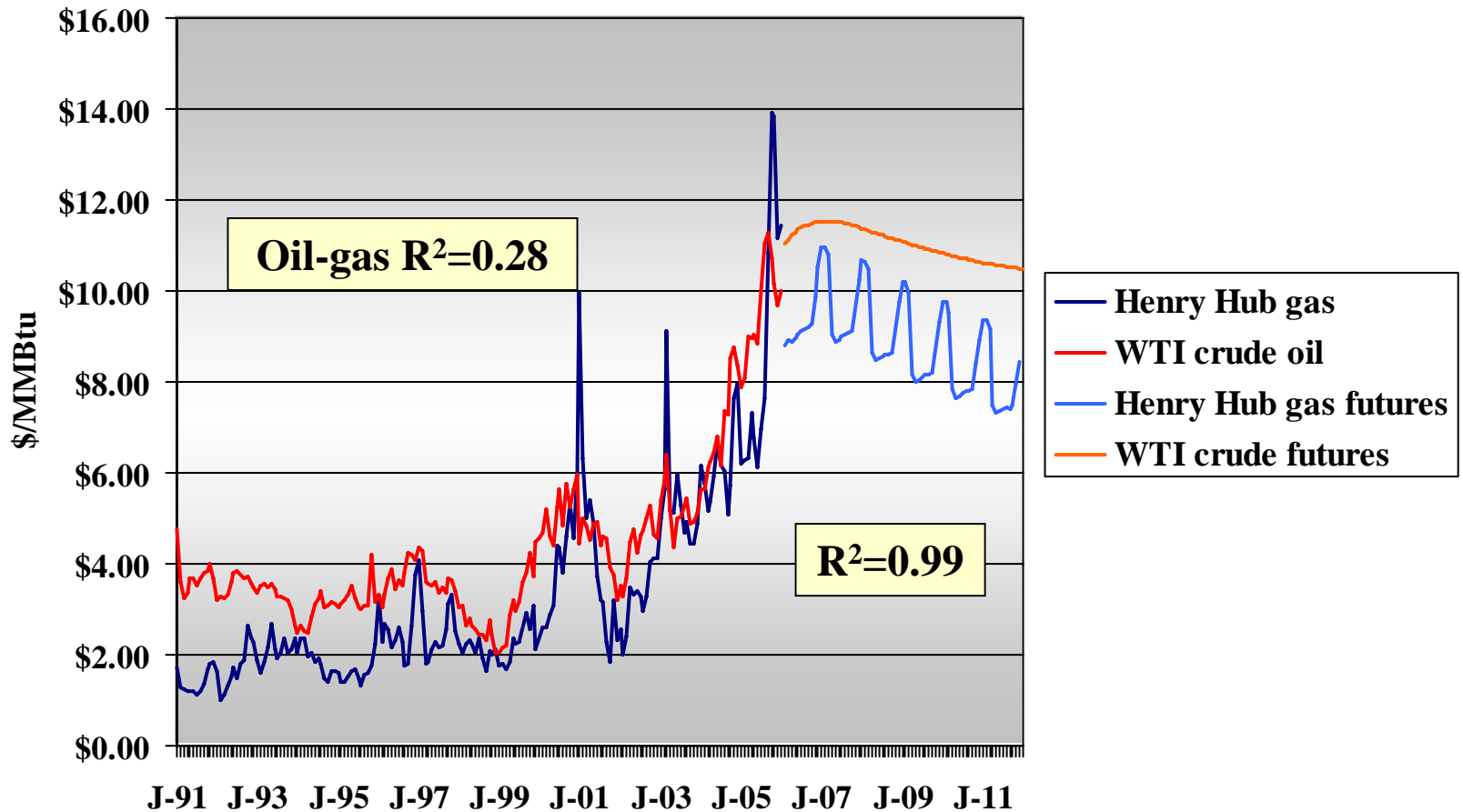
Agenda

1. Introduction
2. Extreme swings in U.S. gas prices
3. Outlook for rising gas demand for power
4. Gas pricing and LNG issues
5. Conclusions.

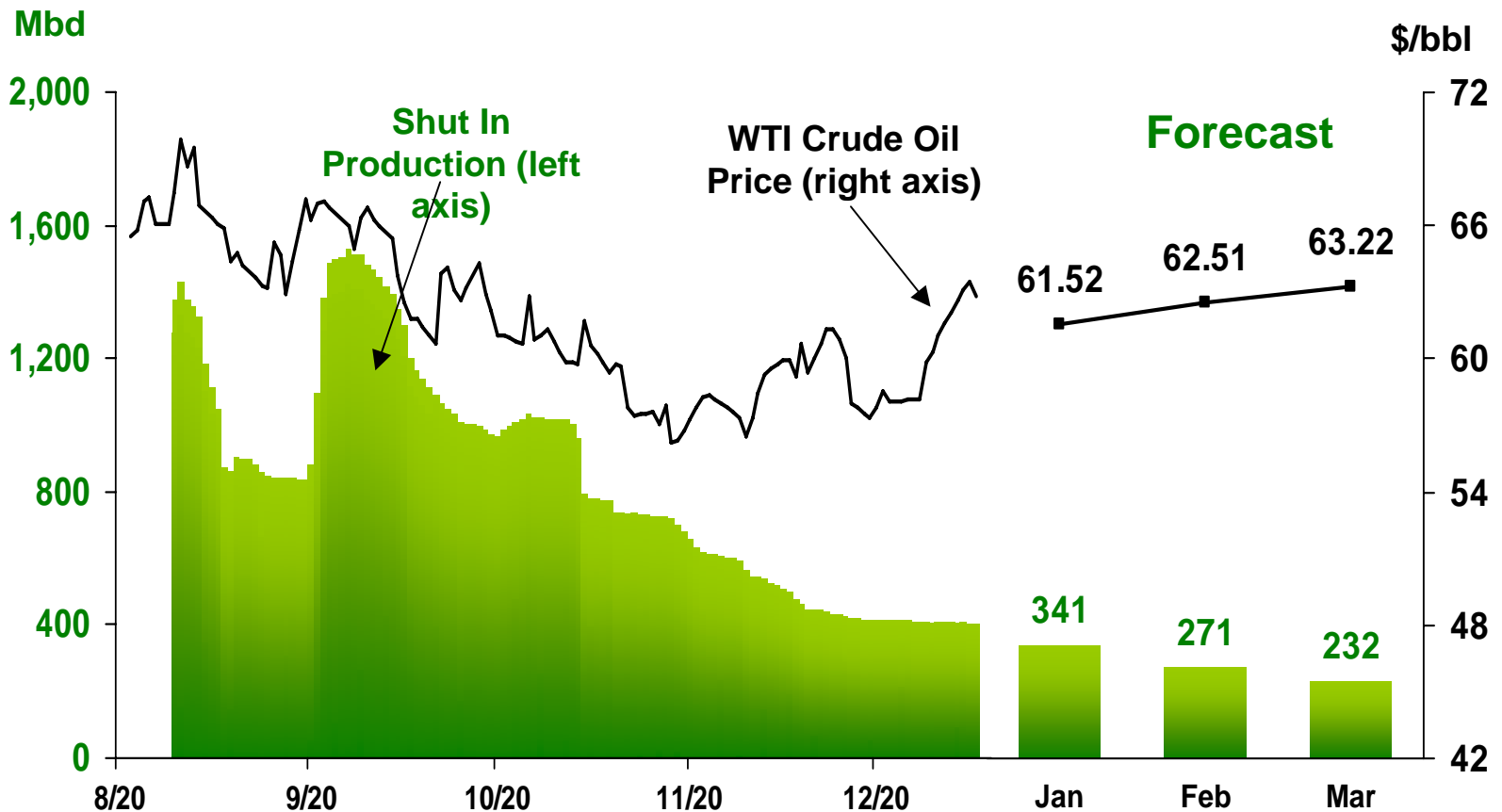
North American gas resources are prolific, but E&P costs are rising (Tcf).



Inflated gas prices reflect hurricane damage and supply strangulation.

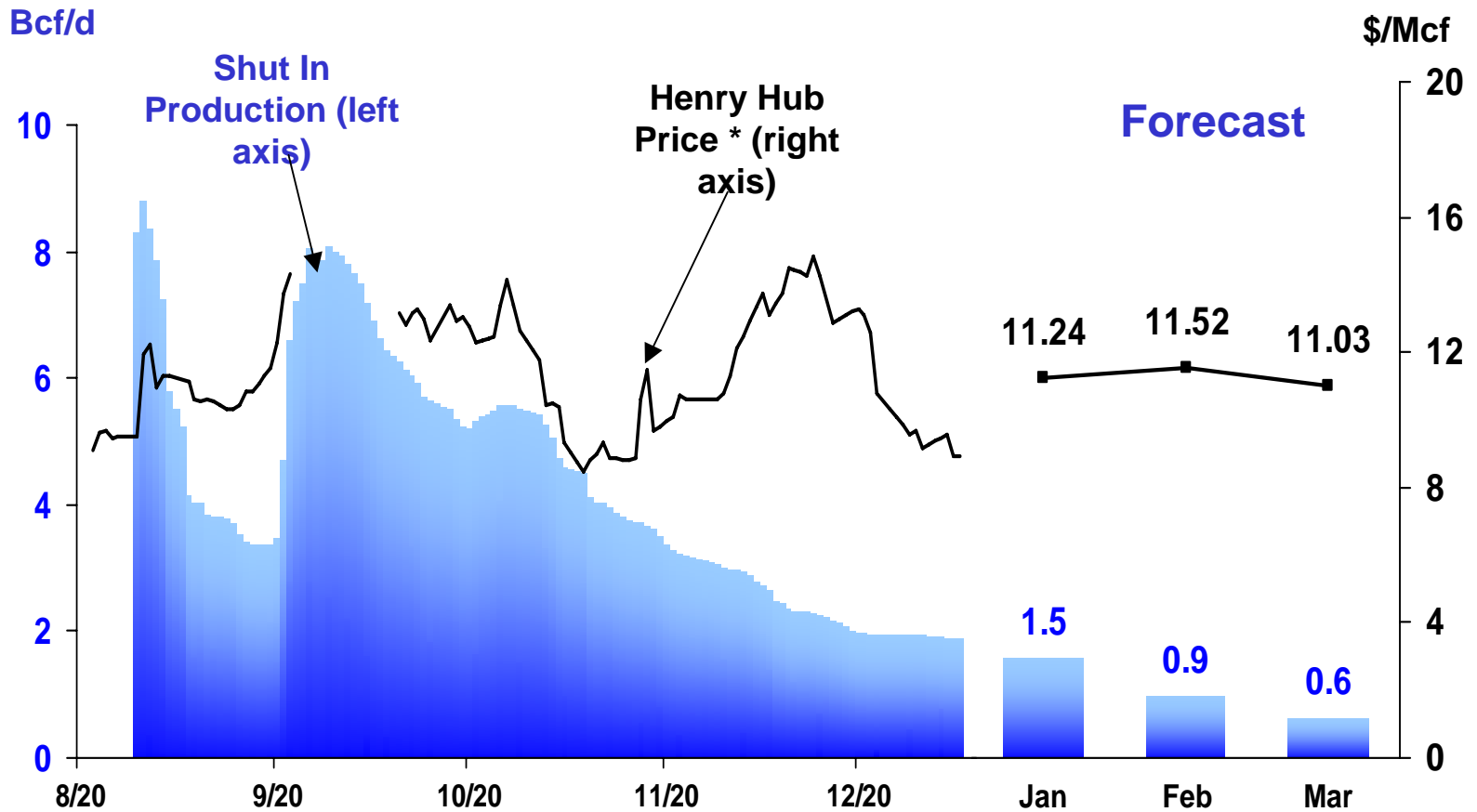


Shut-In Federal Offshore Gulf Crude Oil Production



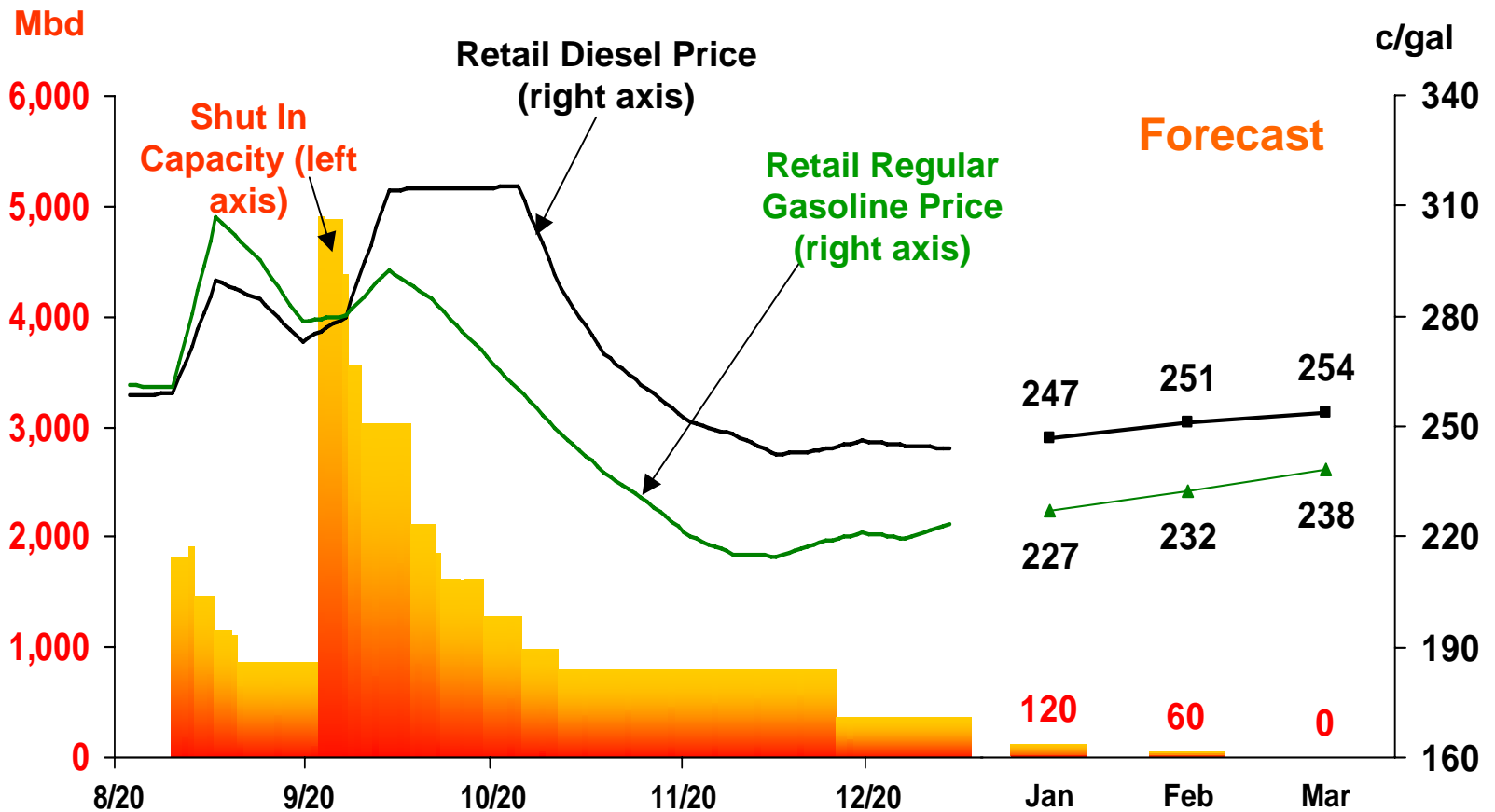
Source: USEIA Short Term Outlook 1/2006; Mbd = Thousand barrels per day, \$/bbl = Dollars per barrel.

Shut-In Federal Offshore Gulf Natural Gas Production



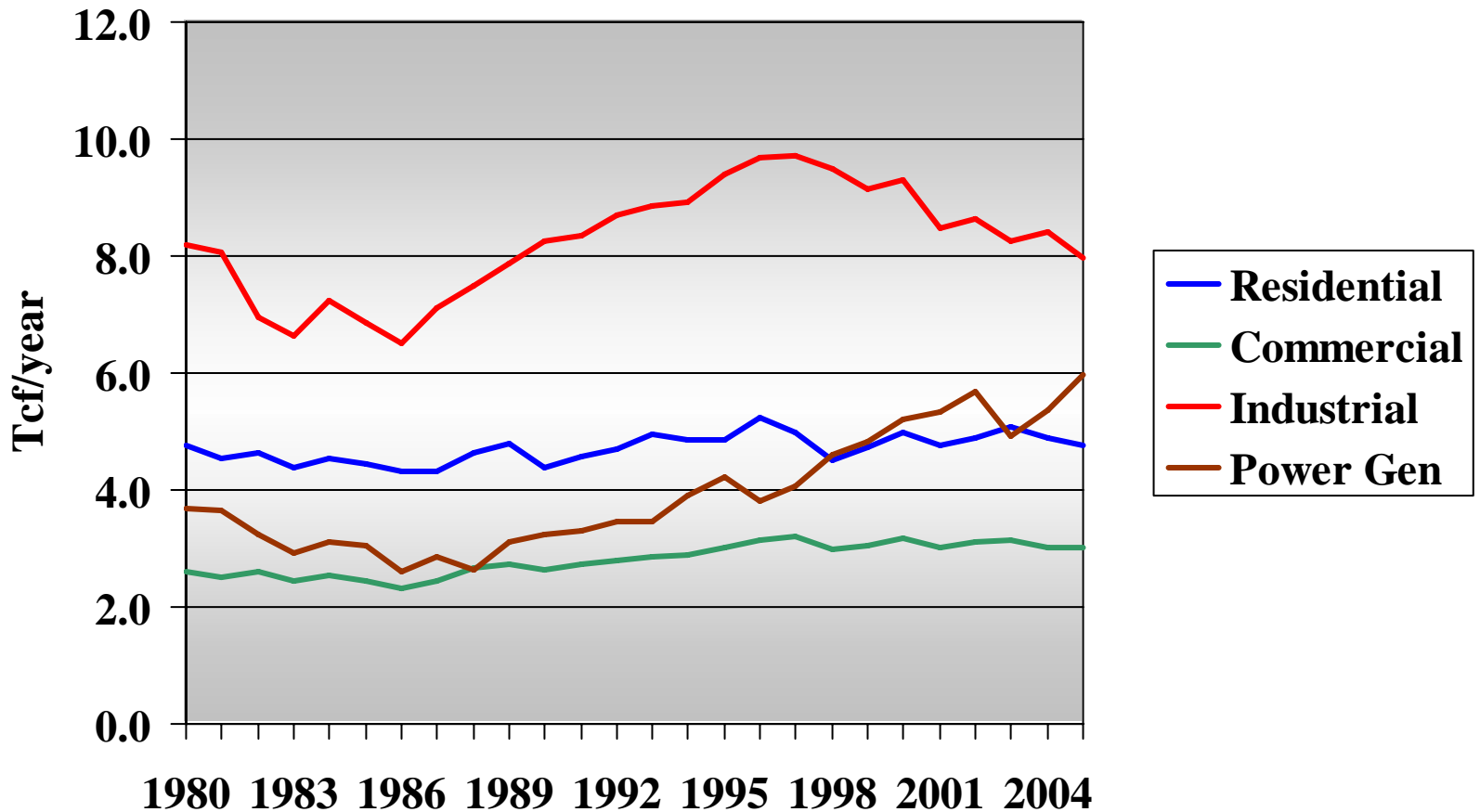
Source: USEIA Short Term Outlook 1/2006; note, trading on Henry Hub suspended 9/23-10/6;
 Bcf/d = Billion cubic feet per day, \$/Mcf = Dollars per thousand cubic feet.

Shut-In Gulf Crude Oil Refinery Capacity

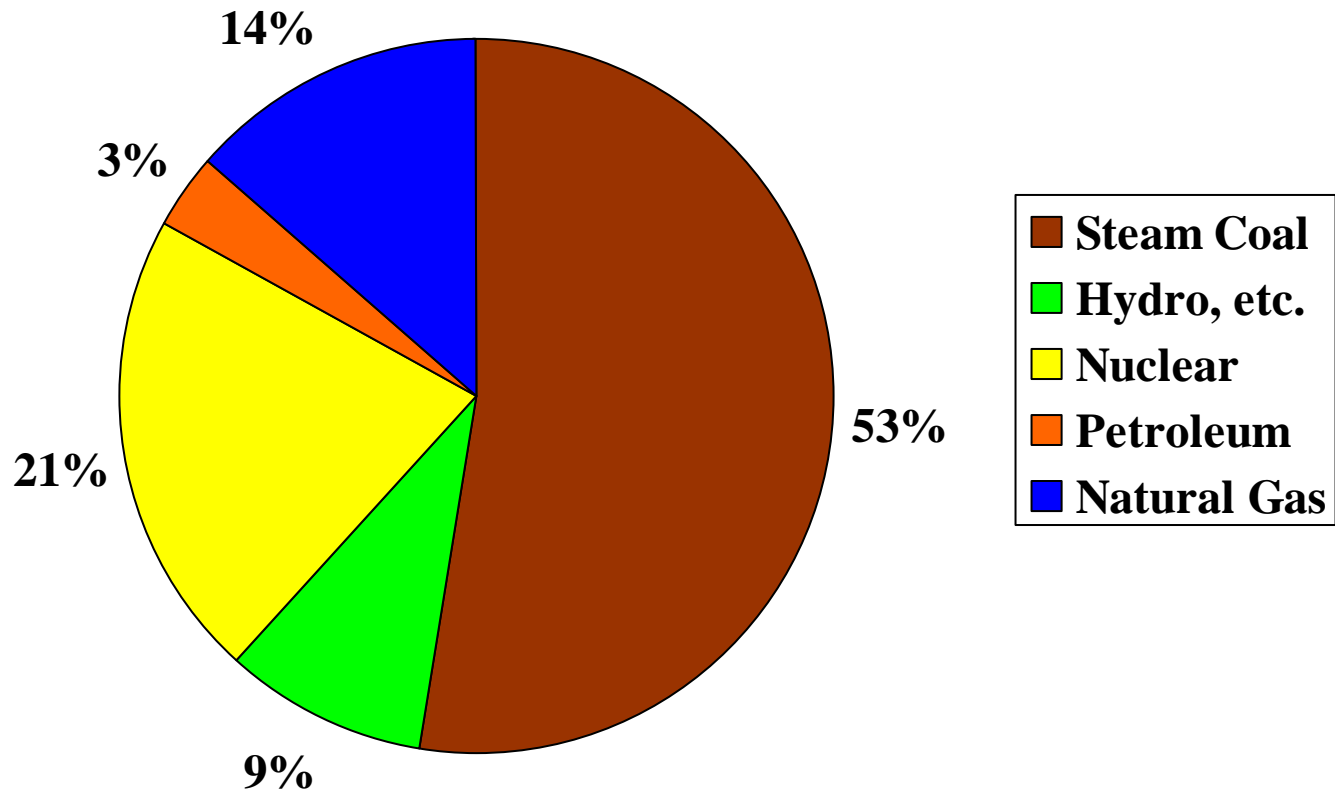


Source: USEIA Short Term Outlook 1/2006; note, excludes refineries classified as restarting but not operating at normal capacity; Mbd = Thousand barrels per day, c/ gal = cents per gallon.

Industrial gas users have steadily shed their gas demand.



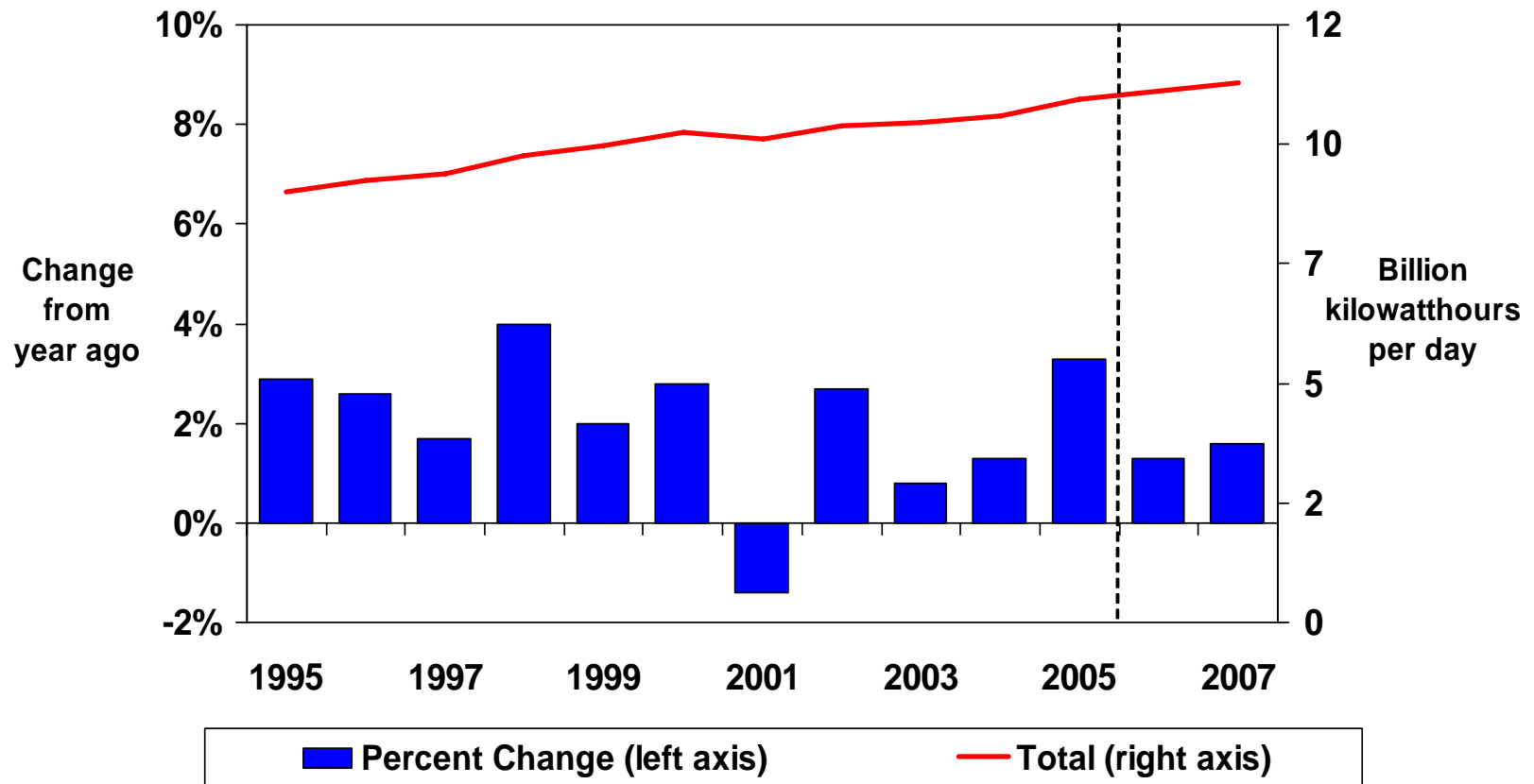
“King Coal” still accounts for 53% of U.S. power generation fuel.



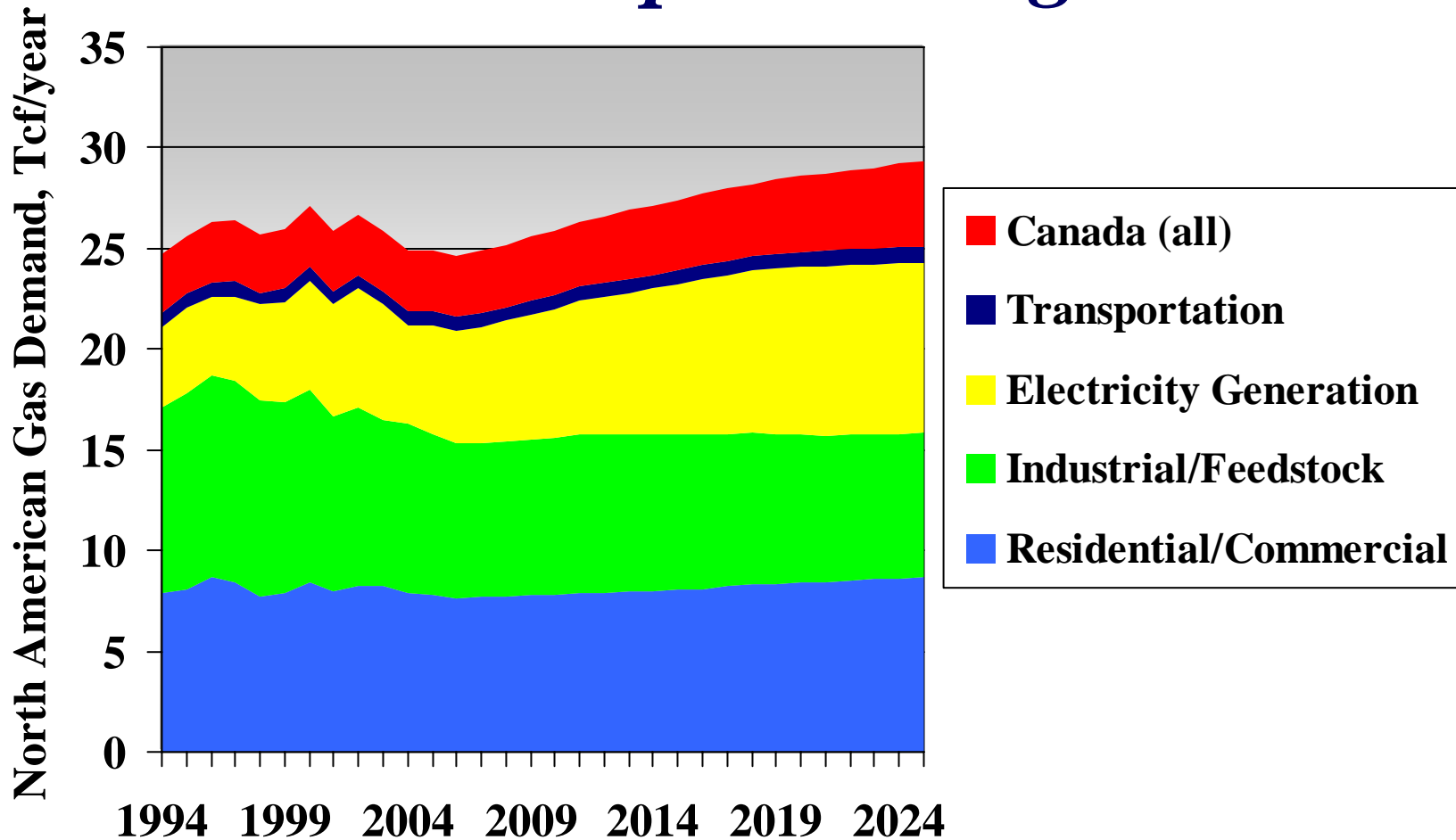
But the U.S. will increasingly rely on gas-fired power plants.

- ◆ More than new 200 gas-fired power plants were completed in the U.S. since 1990.
- ◆ This includes a total of 139 GW of newly installed gas-fired generating capacity.
- ◆ Natural gas comprised 97% of new capacity added during 1990s.
- ◆ Very few new coal or nuclear plants will be built and in-service until 2020.
- ◆ In addition, Canada is meeting its Kyoto responsibilities in part by replacing selected coal-fired power plants with natural gas.

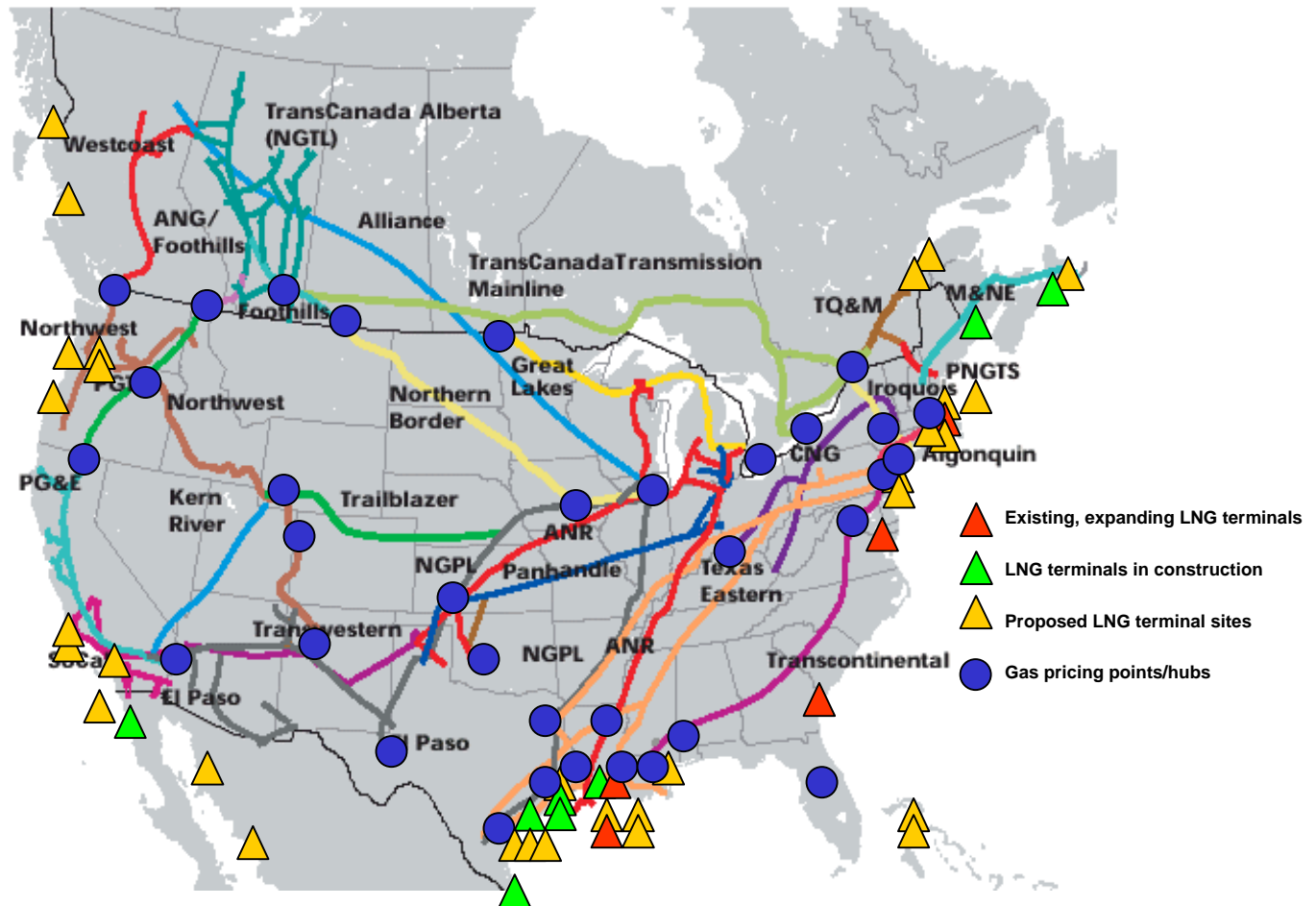
U.S. power generation gas demand is growing steadily.



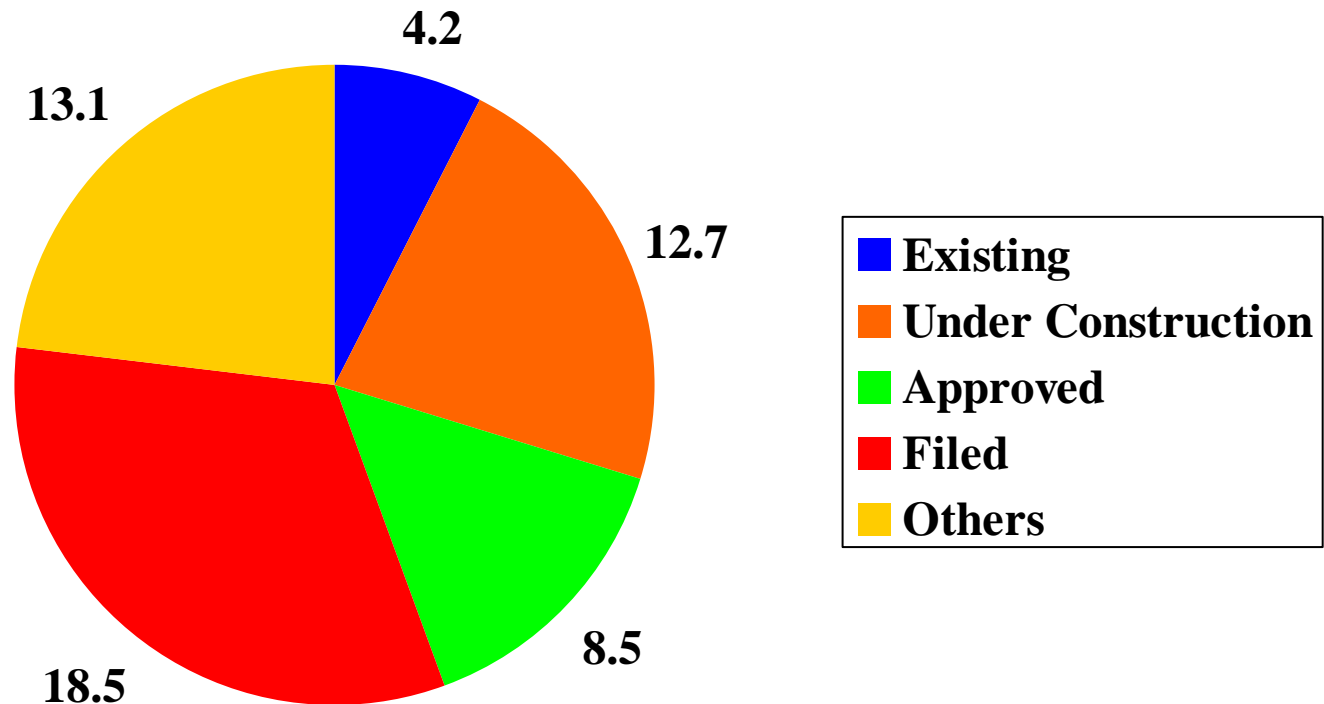
With few substitutes, gas for power will rise 2.9% p.a. through 2020.



This growth is driving increased U.S. demand for LNG imports.

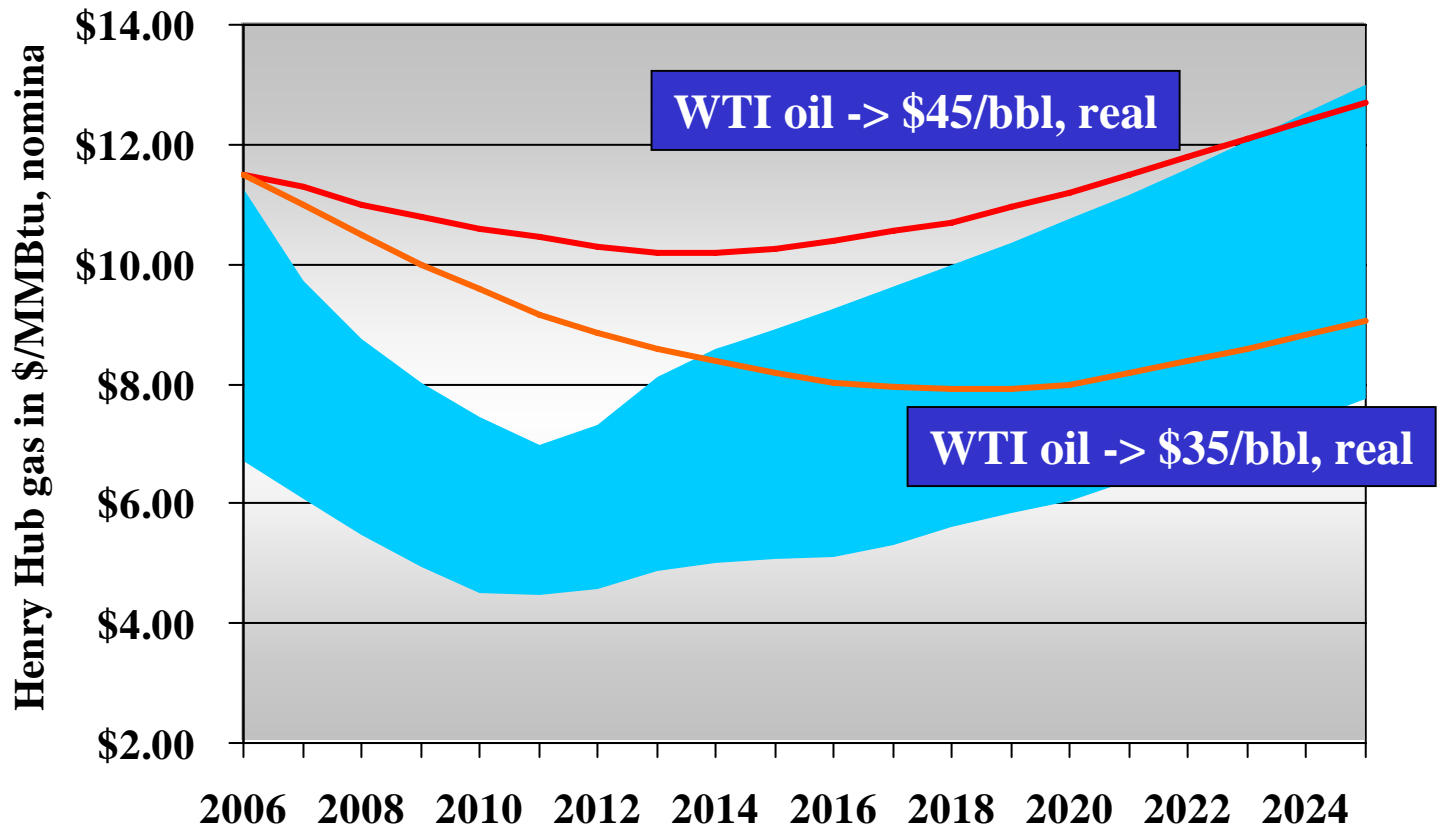


Now, nearly 60 Bcf/day worth of LNG receiving capacity is proposed.



Bcf/day of capacity for North America

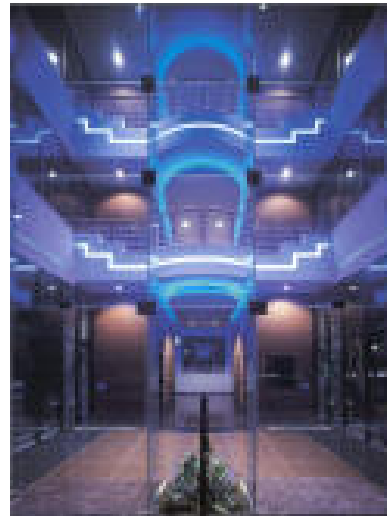
Gas and oil price forecasts are not in synch, but they should be!





Major conclusions:

- ◆ High gas prices are curbing growth in gas demand.
- ◆ Nonetheless, gas demand for power generation will continue to grow for at least a decade.
- ◆ Later on, gas from coal (ICG) will become the power plant fuel of choice.
- ◆ LNG's share of North American gas supplies will rise to 15-20 Bcf/day within a decade – mostly to the Gulf; diverse suppliers are emerging on five continents.
- ◆ Alaskan pipeline gas won't ease prices until after 2015.



Benjamin Schlessinger and Associates, Inc.

The Bethesda Gateway

7201 Wisconsin Avenue, Suite 740

Bethesda, MD 20814

Phone: (301) 951-7266

Fax: (301) 951-3381

Visit us at www.BSAenergy.com