The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Peak Oil Overview - June '08

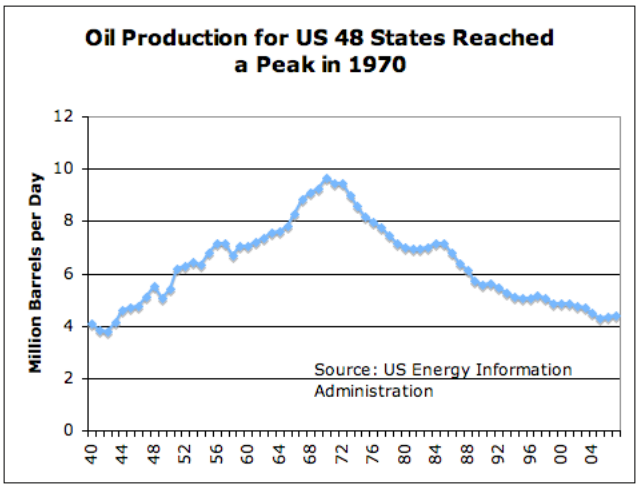
Gail Tverberg
TheOilDrum.com

Outline

- The US oil story
- The world oil story
- Five myths

The US Oil Story

The US Oil Story



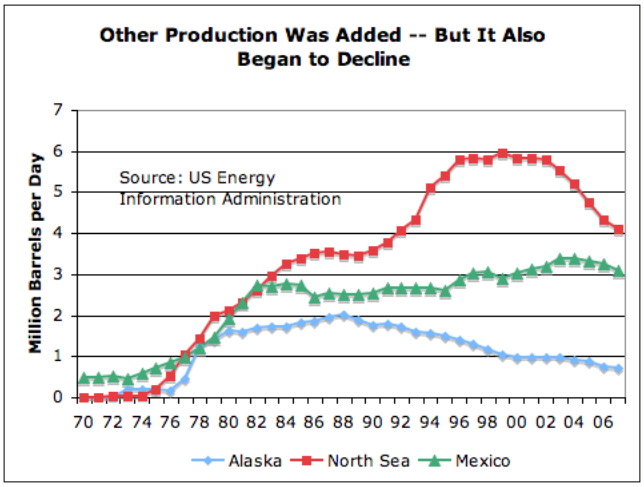
US Peak in 1970

- US had been world's largest producer
- Peak came as a surprise to most
  - Had been predicted by Hubbert in 1956
- Precipitated a rush to find oil elsewhere
  - Ramp up Saudi and Mexico production
  - New production in Alaska and North Sea

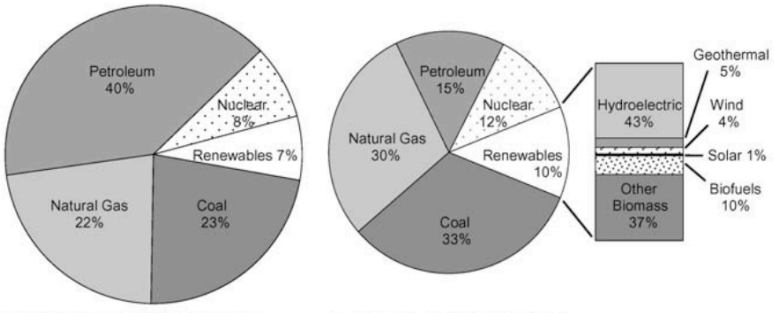
Saudi increases were quickest

- Saudi oil company was run by Americans
  - Able to ramp up quickly
- OPEC embargo in 1973, however
  - Oil shortages
  - Huge oil price run-ups
  - Lead to major recession 1973 - 75

Other oil online by late 1970s



Now the US is a major importer of oil and tiny user of newer renewables



Total Consumption: 100 Quadrillion Btus

Total Production: 71 Quadrillion Btus

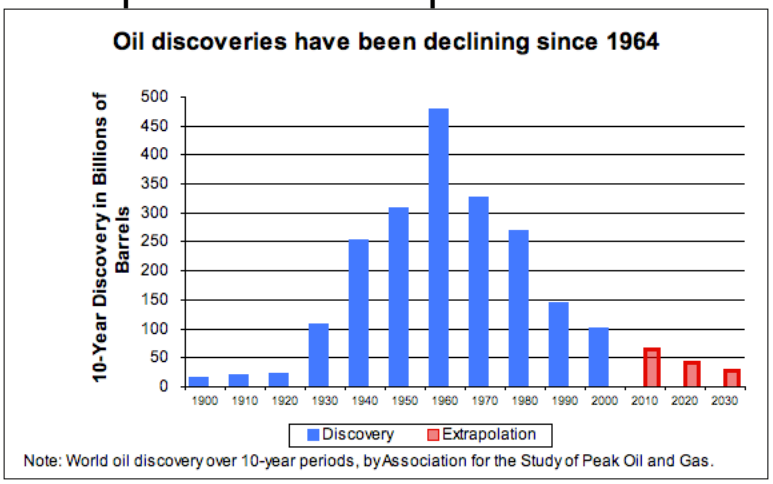
Source: Department of Energy (Energy Information Administration).

Reading the slide:

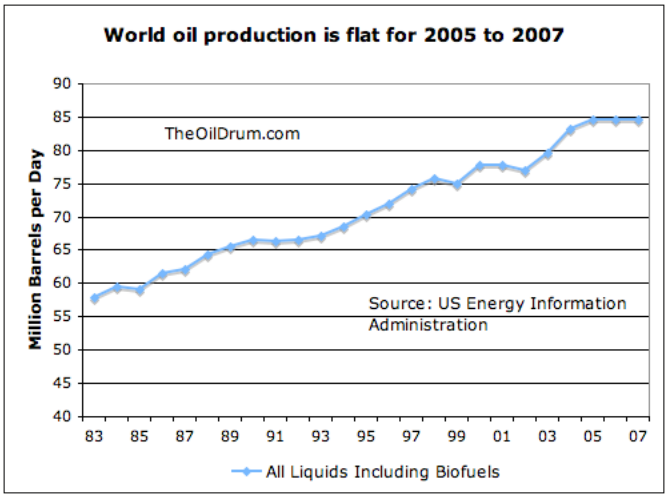
- About two thirds of oil is imported
- Biofuels make up about 1.0% of energy production - a little less of use
- Wind comprises 0.4% of energy production
- Solar comprises 0.1% of energy production

The World Oil Story

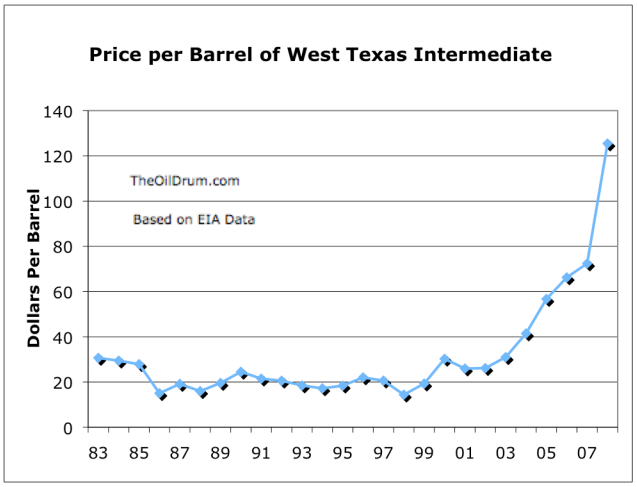
World Oil: Discoveries follow same pattern as US production



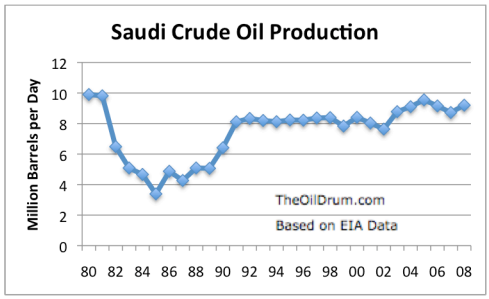
World oil production has stalled



And Prices are Spiking



World has little spare oil production capacity

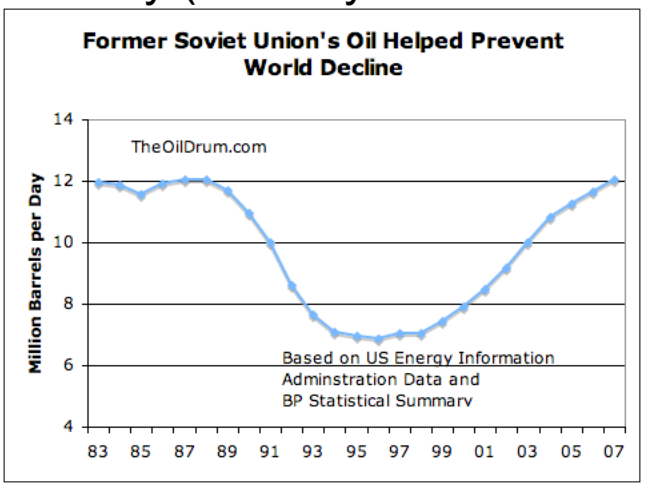


Saudi claims spare capacity, but current discussions relate to only 0.2 million BPD – would leave production below 1980-81 levels.

OPEC's true reserves are unknown

- Published reserves are unaudited
- Last Saudi reserve while US involved was 110 Gb in 1979 (perhaps 168 at "expected")
  - Production to date 81 Gb, implying 29 to 87 Gb remaining; Saudi claims 264 Gb remaining
- Kuwait published 96.5 Gb - Audit 24Gb
- GW Bush says regarding asking Saudi Arabia for more oil
  - "It is hard to ask them to do something they may not be able to do."

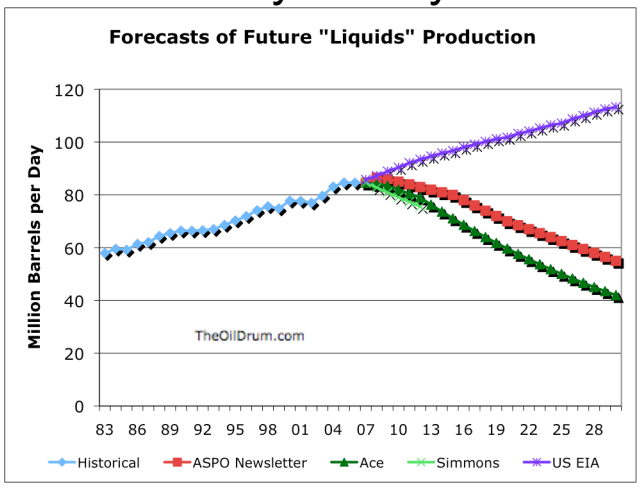
FSU production has increased recently (but may decline in '08)



Production going forward is uncertain

- OPEC refuses to increase quotas
  - Possible small increase by Saudi Arabia
- Russian production has begun decreasing
- Little hope for US, North Sea, Mexico
- Canadian oil sands contribution is very small
- Recent discoveries have been small, relative to what is needed
- New production techniques can lead to sudden drop-offs
  - Followed by small dribble for years from EOR

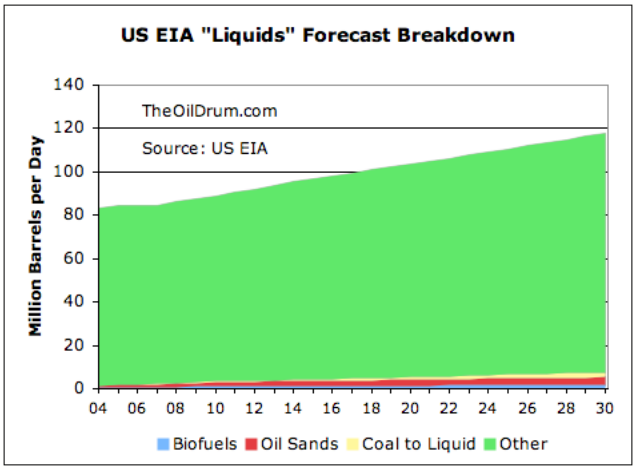
Projections of Future Production Vary Widely



World “All Liquids” Forecasts

- “All Liquids” - Includes biofuels and “coal to liquid” fuels
- US EIA forecast - Based solely on demand
- ASPO Newsletter - Assoc. for the Study of Peak Oil and Gas Ireland, June ‘08
- “Ace”- Tony Eriksen, on The Oil Drum
- Simmons - Matt Simmons, recent interview on evworld.com

EIA expects biofuels, CTL, and oil sands to remain small



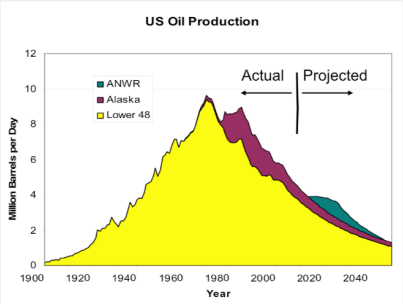
Five Myths

Myth #1: OPEC could produce more if it used current techniques

- National oil companies use same service companies US companies do
- Most are using up-to-date techniques
- Expenditures often are high
- Problem is very old fields
- Overstated reserves raise expectations

Myth #2: Drilling in Arctic National Wildlife Refuge will save us

U.S. Oil Production



Myth #3: A small downturn can easily be made up with energy efficiency

- The quickest impacts are financial
  - Recession or depression
  - Serious recession in 1973 - 75
- Use of biofuels raises food prices
  - Further increases recession risk
- Don't need peak for recession
  - Only need supply/demand shortfall
  - Likely what we are experiencing now

Myth #4: Canadian oil sands will save us

- Hard to see this with current technology
  - Technology known since 1920s
  - Production slow and expensive
- Natural gas is in limited supply
  - Alternatives require more capital
- Most optimistic forecasts equal 5% of current world oil by 2030
  - Even this exceeds available natural gas

Myth #5: Biofuels will save us

- Corn-based ethanol has many problems
  - Raises food prices, not scalable, CO2 issues, depletes water supply
- Cellulosic ethanol theoretically better
  - Still does not scale to more than 20% of need
  - Competes with biomass for electric, home heat
- Biofuel from algae might work
  - Not perfected yet