

Imagining a World of Increasing Oil Scarcity

ASPO USA 2012 Conference

Robert Rapier

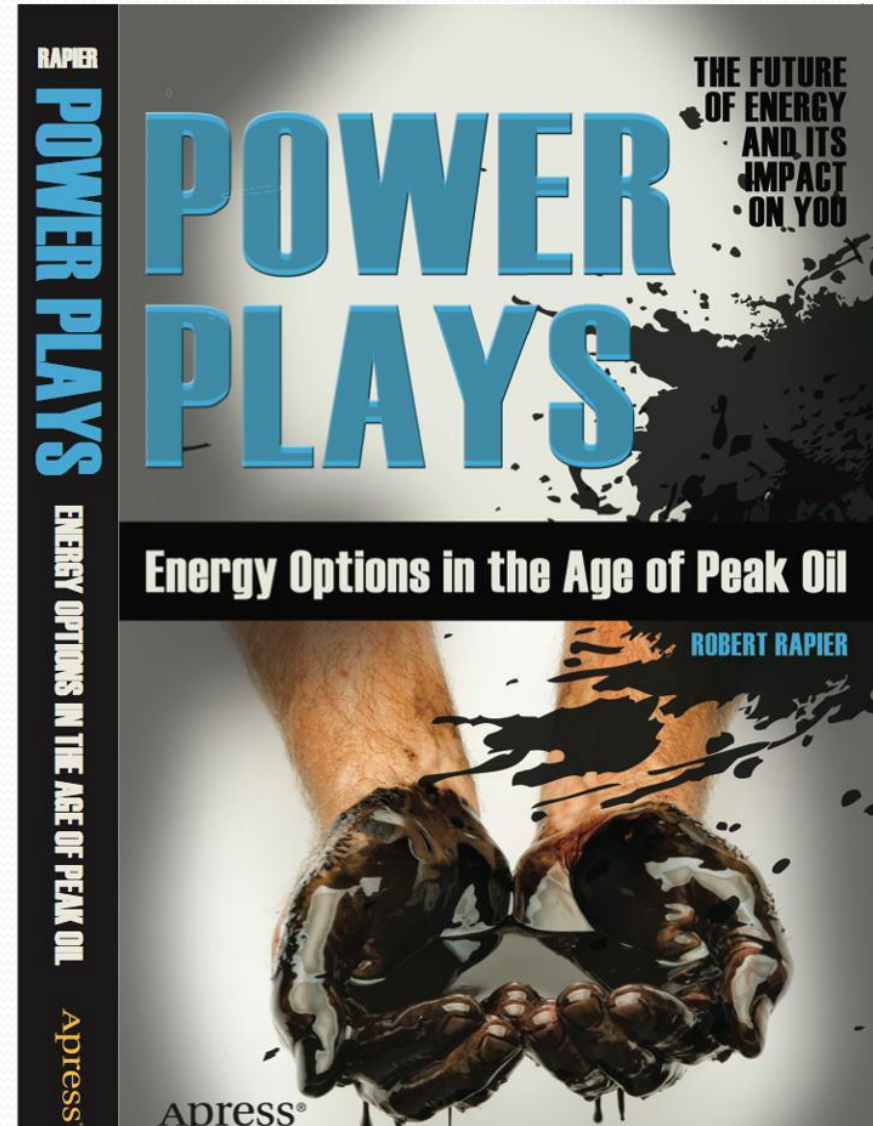
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So, What Do You Do?

- Chief Technology Officer, Merica International
- Managing Editor, Consumer Energy Report
- Chief Investment Advisor, The Energy Strategist
- Director of Research and Technology, SOTA Energy Group

Outline

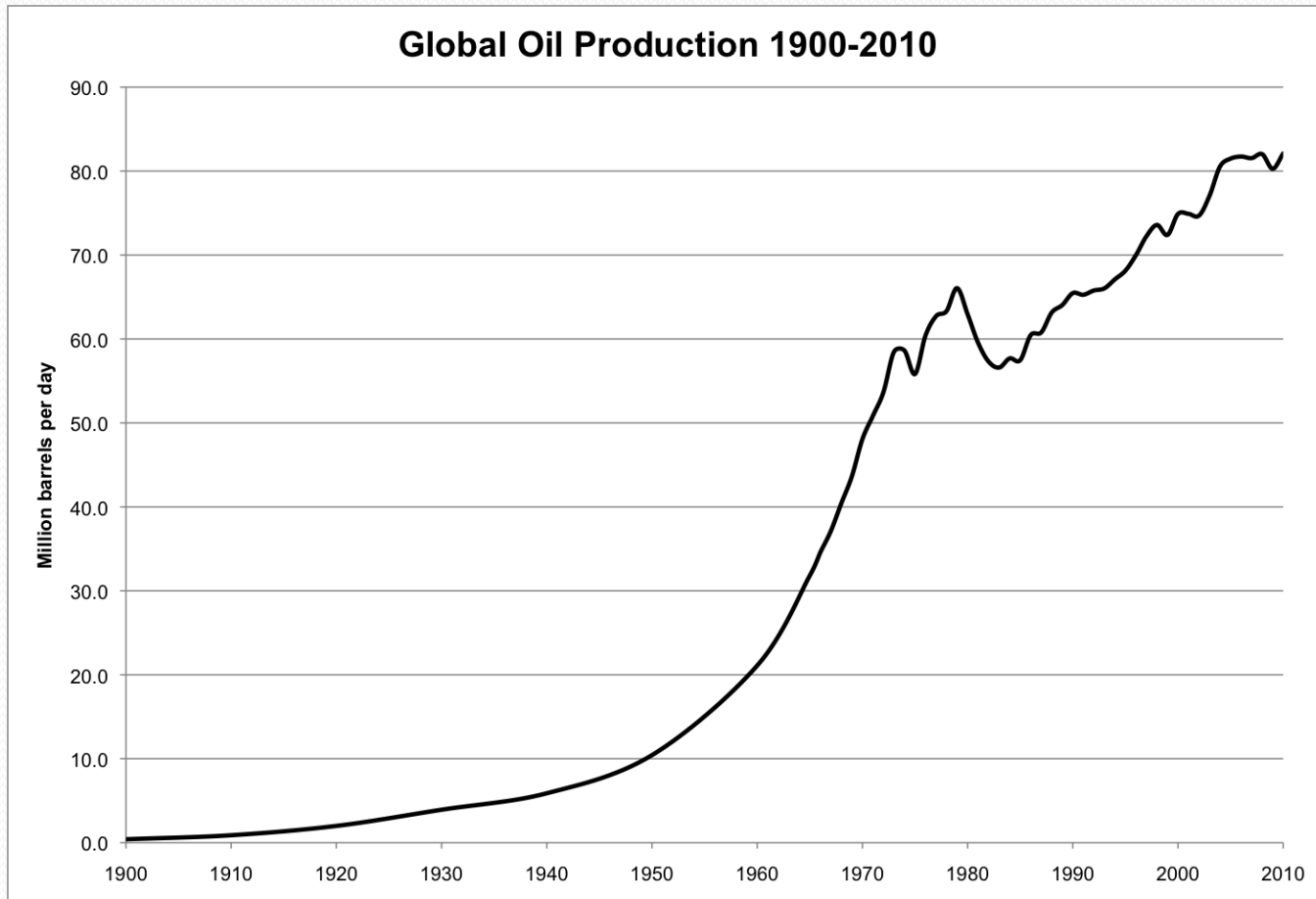
- Overview/Review
- Threats
- Mitigation
- Barriers





Overview

Global Oil Production

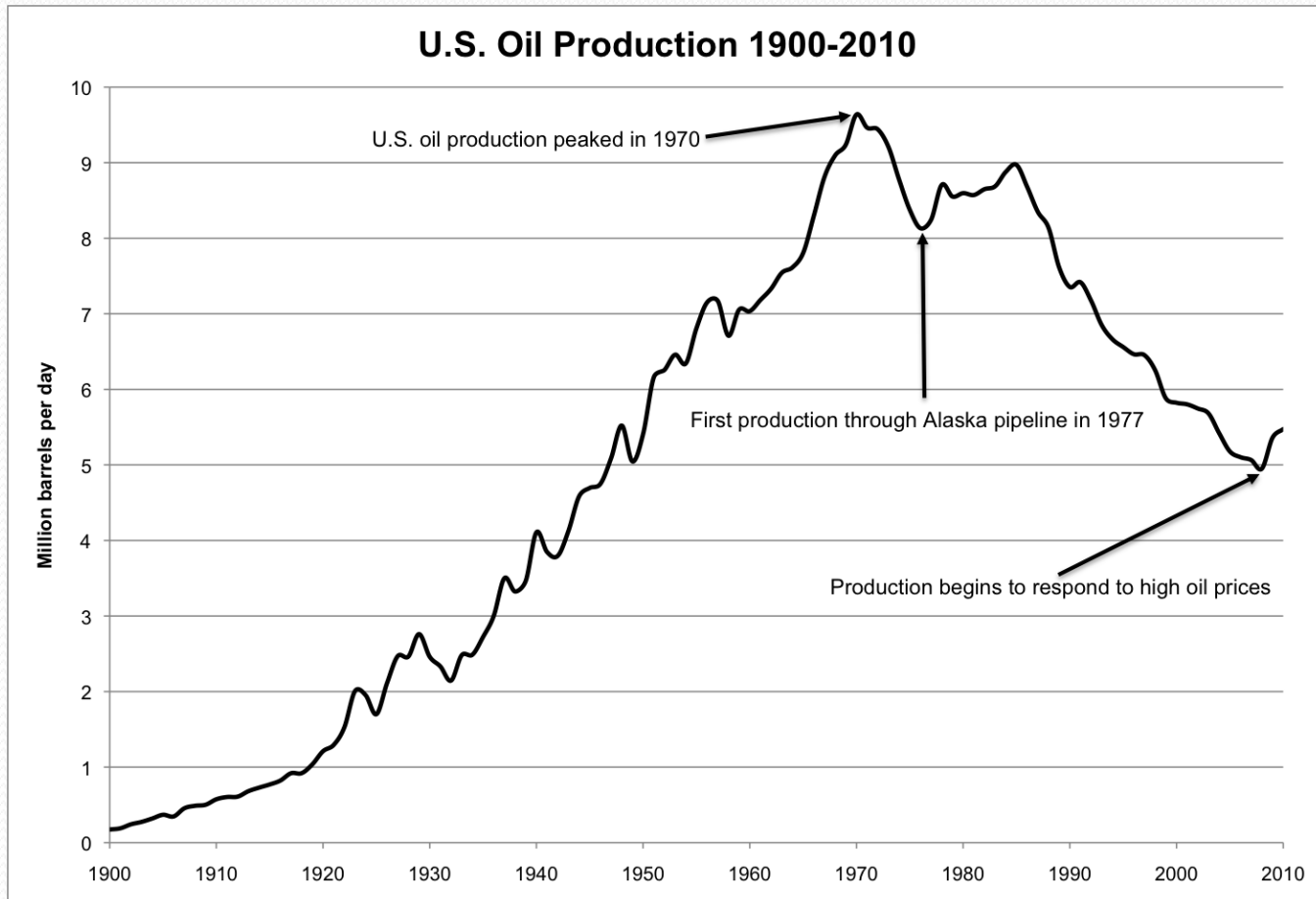


Data sources: Netherlands Environmental Assessment Agency and BP Statistical Review of World Energy 2011

Global Oil Usage Could Fill This Stadium ~5 Times a Day



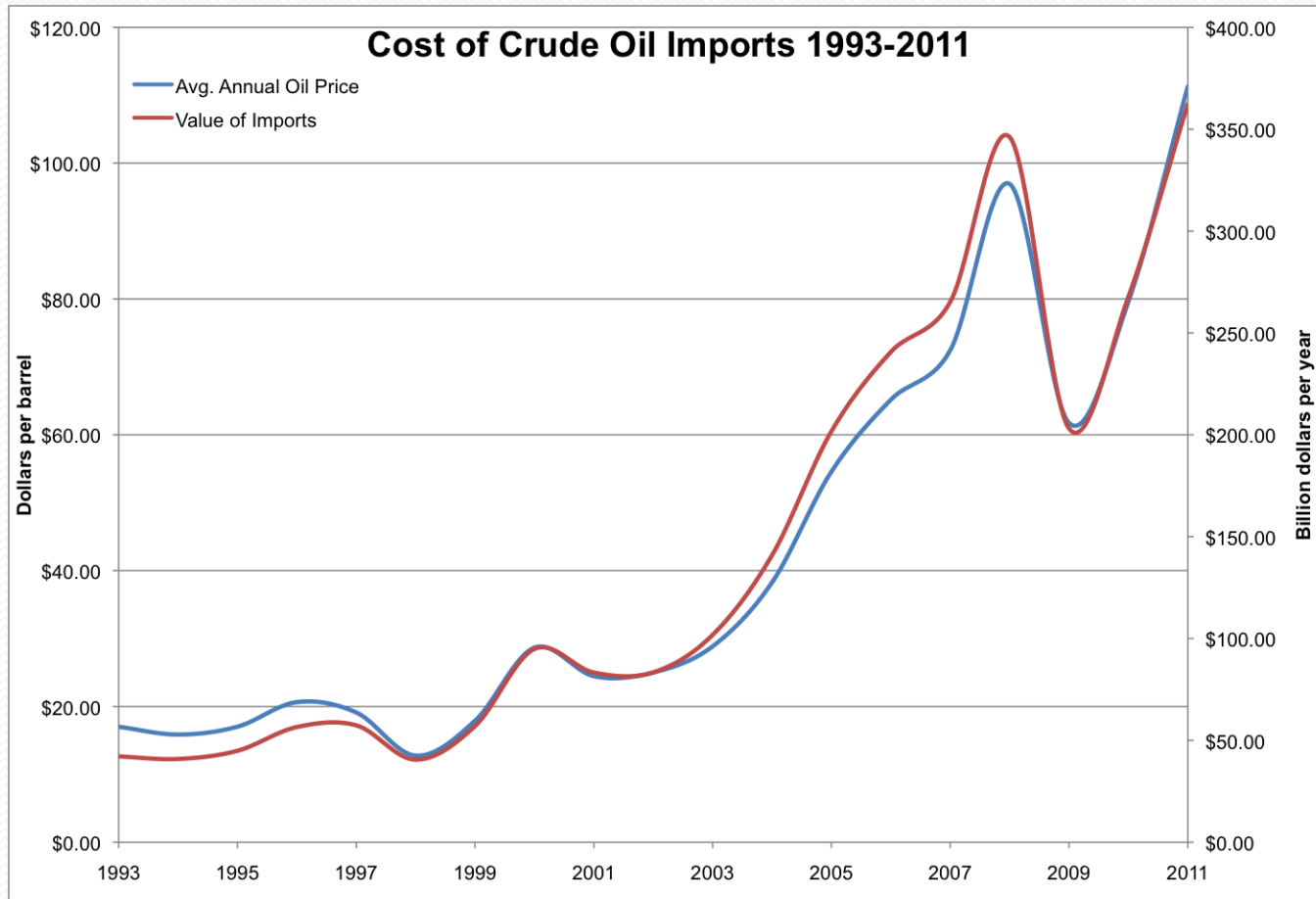
U.S. Oil Production



Sources of U.S. Crude Imports

Thousand Barrels of Crude Oil Per Day Imported into the U.S.				
COUNTRY	2011	2001	2001 Rank	Change
CANADA	2,149	1,356	2	58%
MEXICO	1,216	1,394	3	-13%
SAUDI ARABIA	1,099	1,611	1	-32%
NIGERIA	968	842	5	15%
VENEZUELA	951	1,291	4	-26%
IRAQ	470	795	6	-41%
ALGERIA	378	11	29	3336%
COLOMBIA	303	260	9	17%
ANGOLA	294	321	7	-8%
BRAZIL	259	13	27	1892%
ECUADOR	178	113	13	58%
KUWAIT	147	237	11	-38%
RUSSIA	105	0	NA	NA
CONGO (BRZ)	58	40	16	45%
CAMEROON	31	3	33	933%

The Cost of Oil Imports





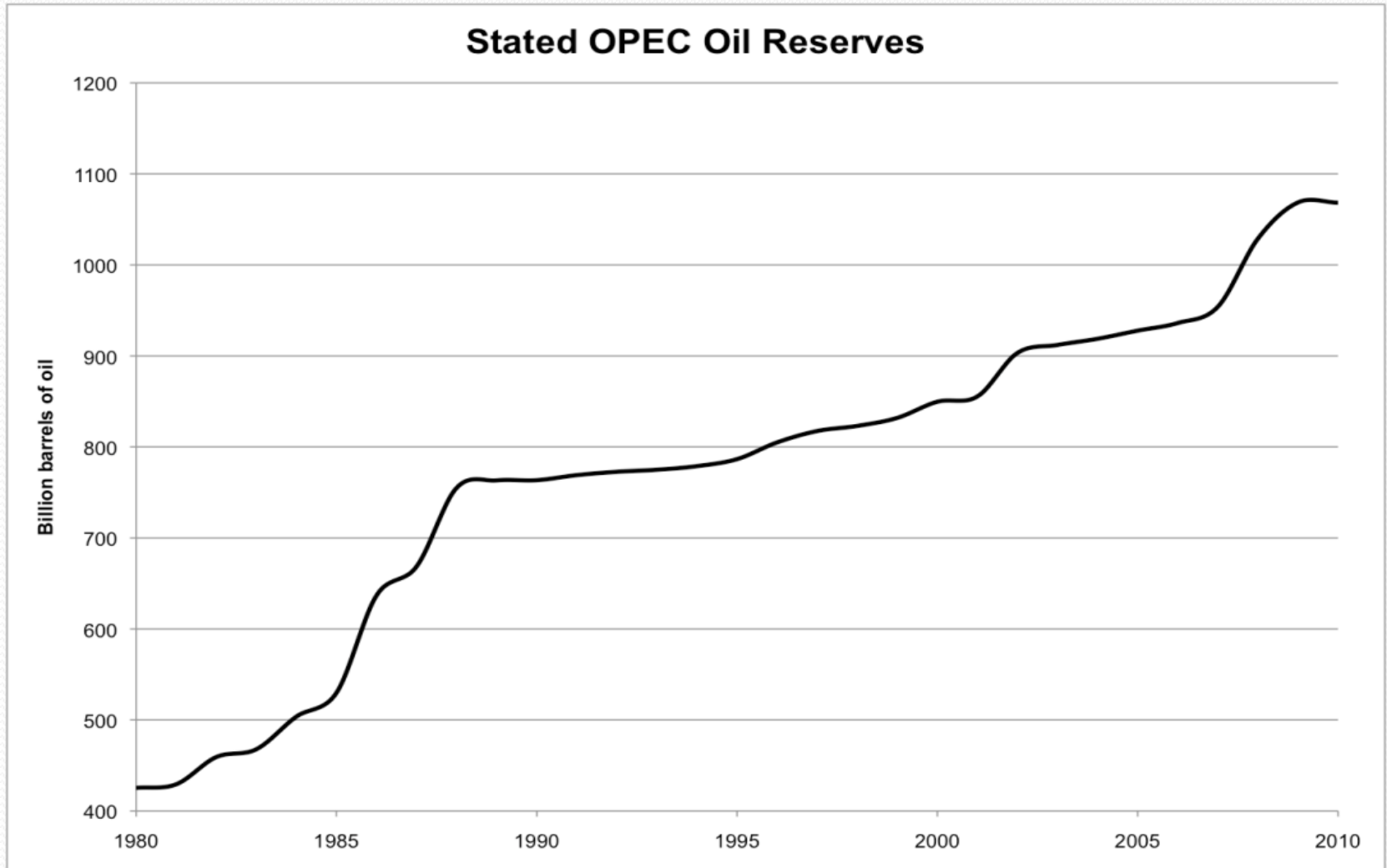
Threats

1. Oil exporters/OPEC

- 83% of the world's remaining proved oil reserves are controlled by OPEC and Russia
- Higher oil prices lead to higher revenues which generally leads to higher government spending
 - In 2009, Saudi Arabia required oil at \$65/bbl to balance their budget; by 2011 their requirement was \$80/bbl.

“We will do everything that must be done within OPEC to continue strengthening the price of our oil; \$100 is a fair price for a barrel.”– Hugo Chavez in 2008

OPEC Reserves Overstated?

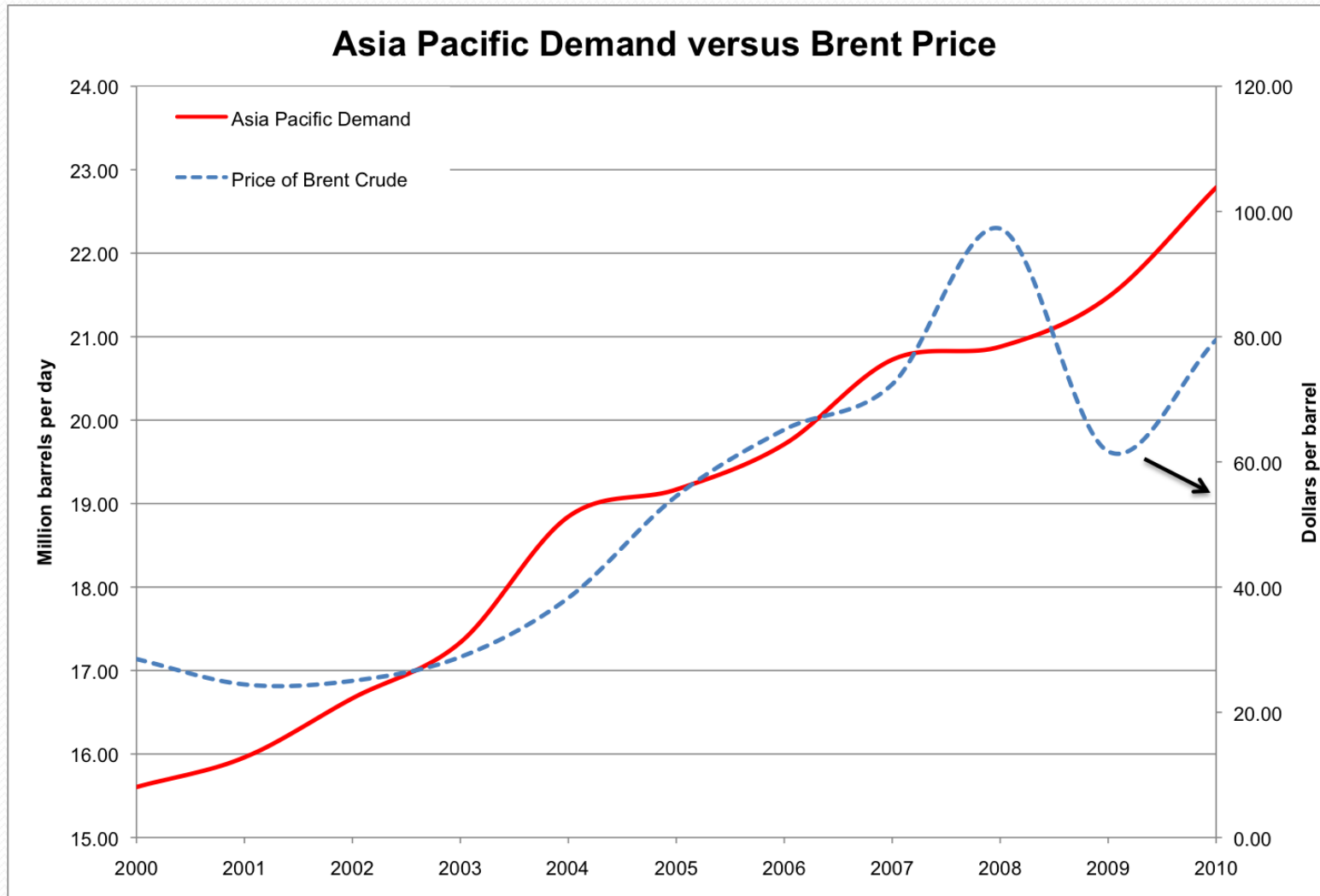


2. Developing Countries

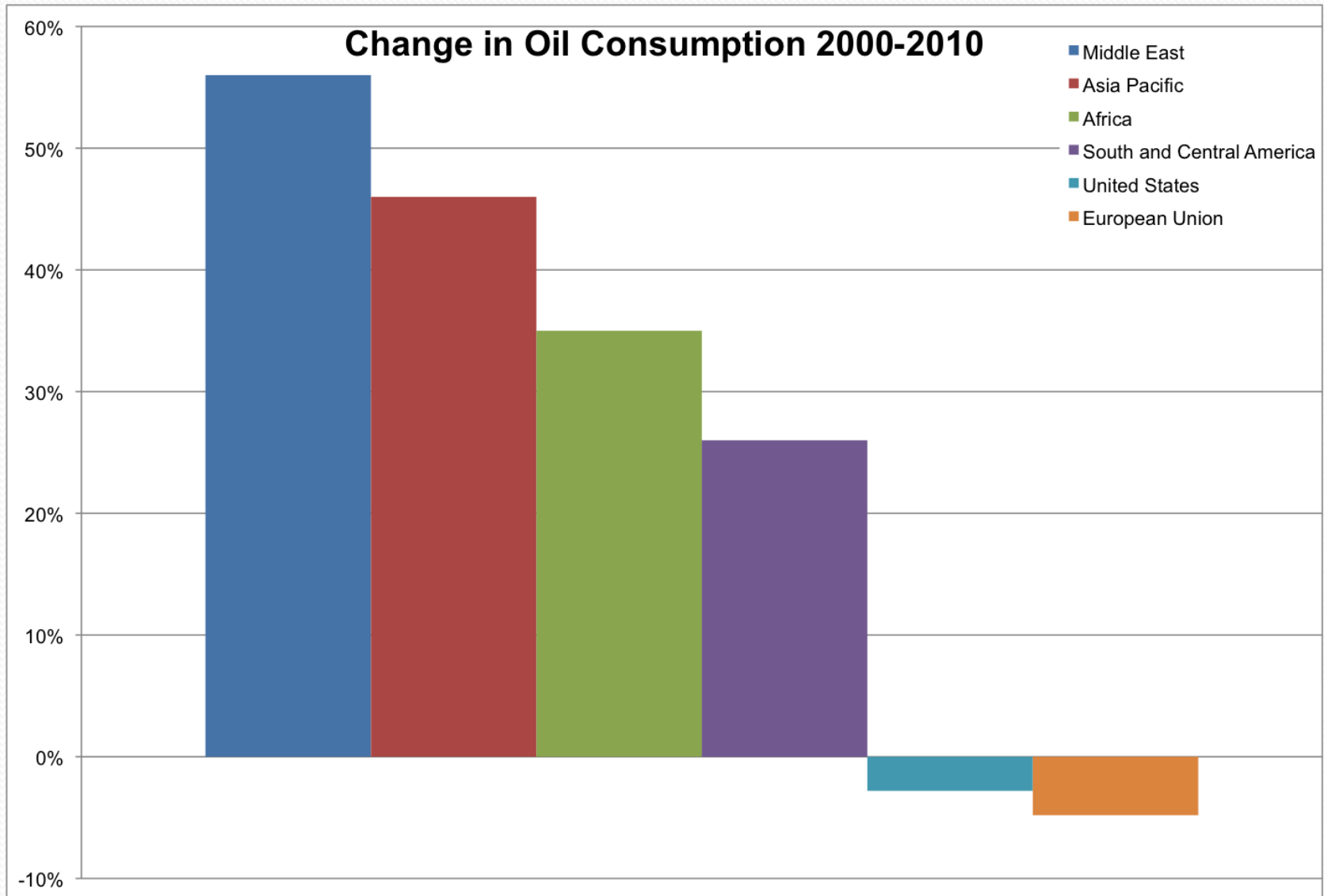
- Oil consumption in the U.S. – 22.6 barrels per person per year and falling
- Oil consumption in China – 2.5 barrels per person per year and rising rapidly
- Global allotment – 4.7 barrels per person per year

"A third of humanity doesn't want to ride bikes anymore. That has profound geopolitical implications." – Anne Korin

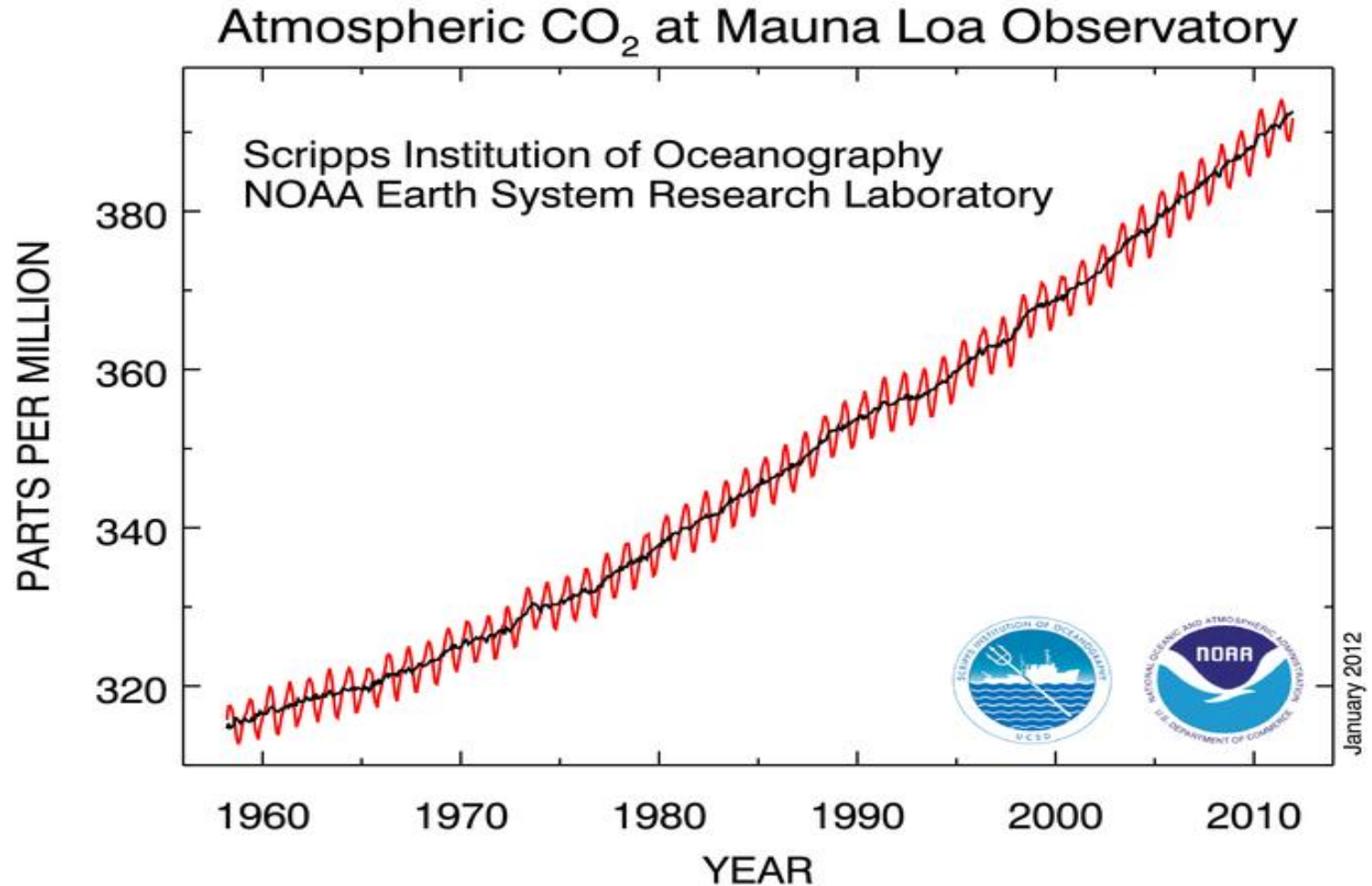
Growing Demand



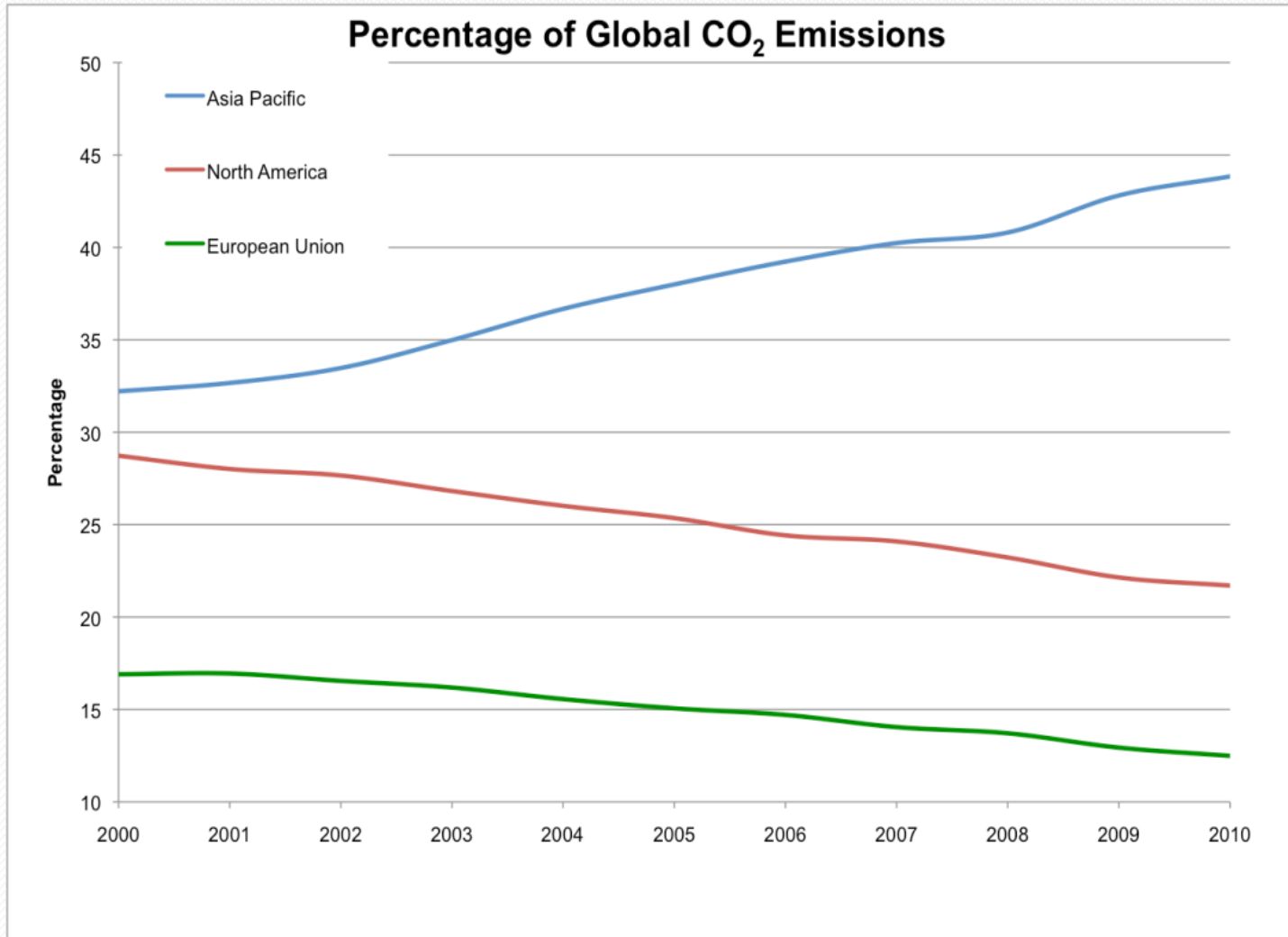
Changes in Oil Consumption



3. Climate Change



An Alarming Trend



How Do Stop a Hurricane?





Mitigation

Basis of a Sound Energy Policy

- Takes into account the supply side, the demand side, and the possibility that projections will be wrong on both counts
- Factors in the impact to future generations
- Capable of weathering changing political climates

Easier said than done

What We Want

- We want energy that is affordable, reliable, convenient, safe, clean – and produced far away
- Fossil fuels: Not always safe or clean
- Nuclear power: Not always safe or clean
- Renewable fuels: Not always affordable or convenient
- Renewable electricity: Not always cheap, reliable, or safe

Affordable usually wins

So We Accept This...



But Clean Energy Also Has a Price

Spain's 18,000 wind turbines may be killing 6 to 18 million birds and bats every year



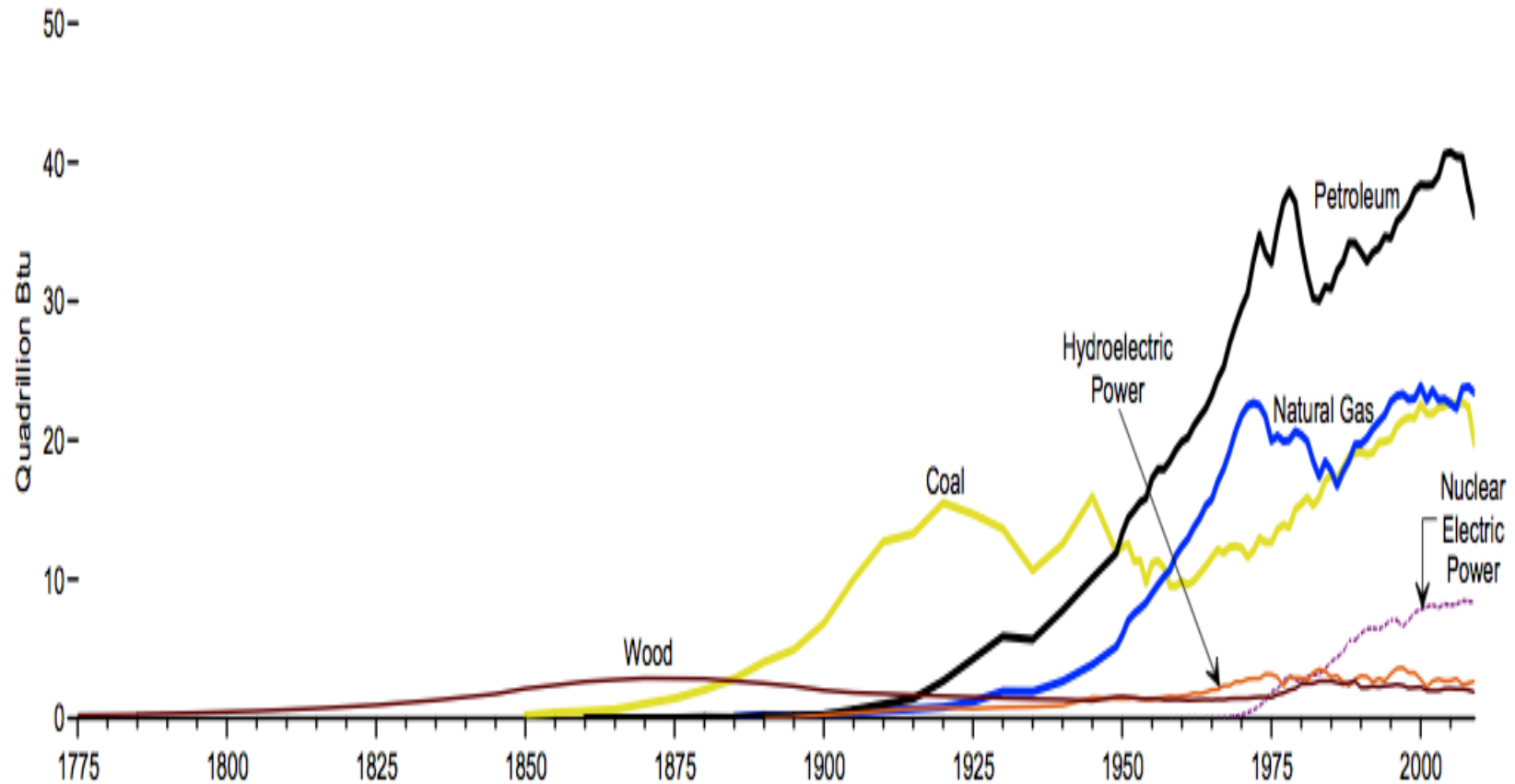
Always Bear in Mind...

- There is no free lunch, so we must understand the trade-offs
- What seems to be too good to be true is too good to be true 99.9% of the time
- Politicians do not understand the energy markets, so when they meddle they usually make matters worse
- People will generally vote out politicians who force them to sacrifice – with allowances for emergencies



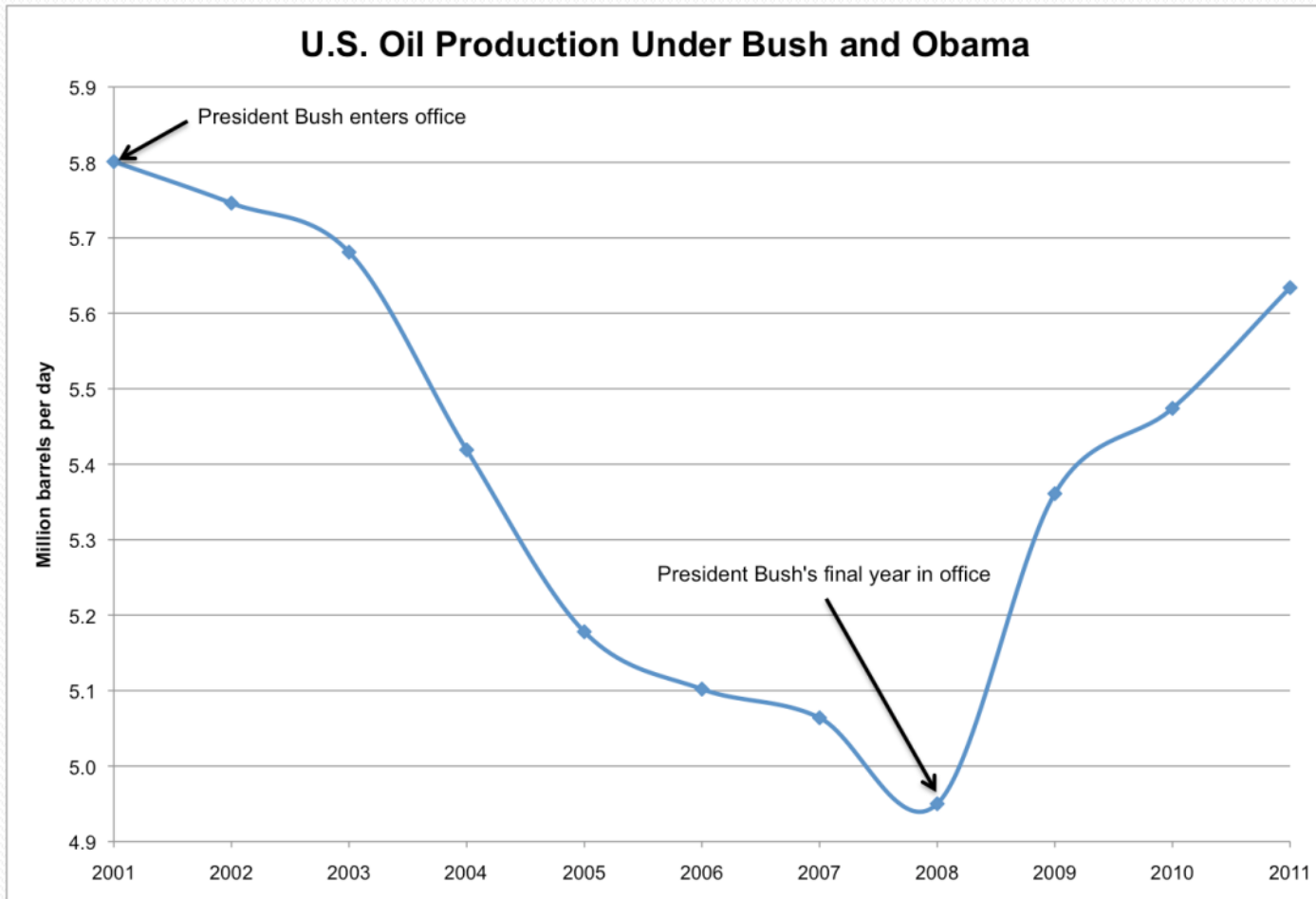
Barriers

The Future Will Be Like the Past

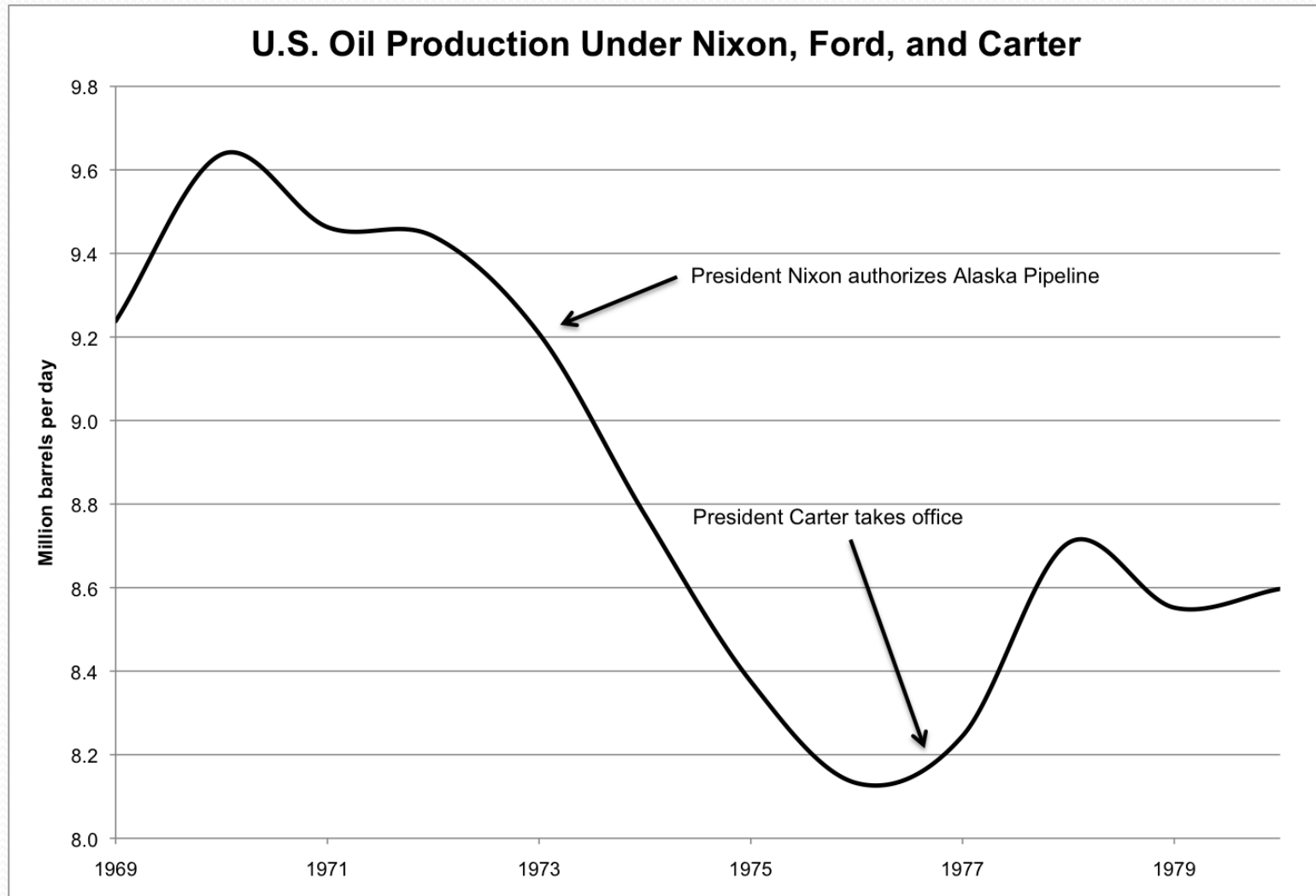


Graphic Source: Energy Information Administration

Unrealistic Political Expectations



Energy Cycles > Political Cycles



The Biggest Barrier is Apathy

- But you personally have the power to:
 - Reduce your oil dependence
 - Educate friends, family, and the person standing next to you at the bus stop

Thank You!