

# ENERGY



# THE DENVER POST

The Denver  
Post Online  
denverpost.com

*Voice of the Rocky Mountain Empire*

★ 50¢ — May vary outside metro Denver

TH IN DENVER



## Winter heat bill to soar by 73%

Xcel rate hike may worsen  
crisis for poor Coloradans



**San Francisco August 2005**



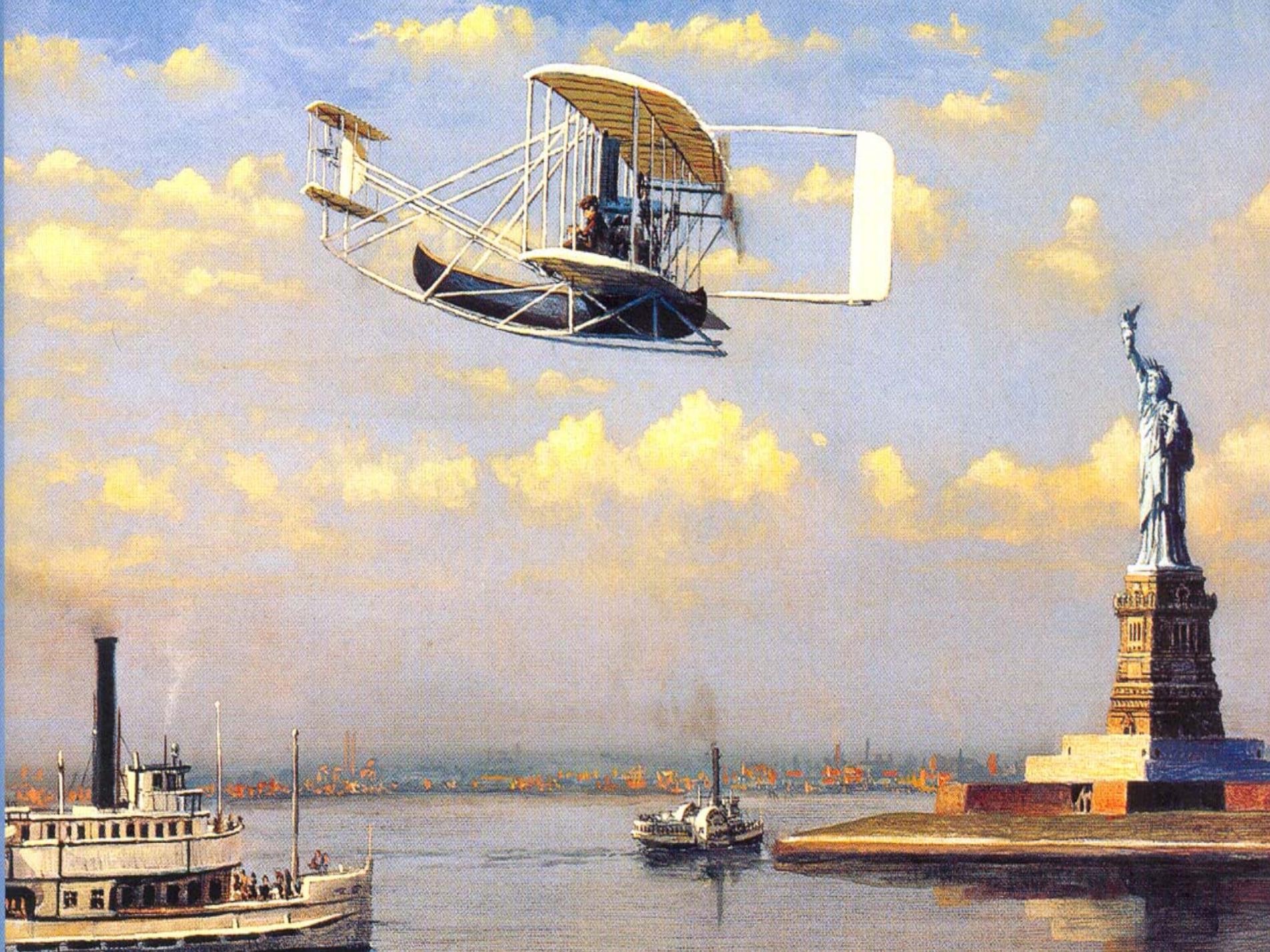


Man's long adventure with knowledge has been a climb up the heat ladder. The creature that crept furred through blue glacial nights now lives surrounded by the hiss of steam and roar of engines... And he is himself a flame, a great roaring, furnace...





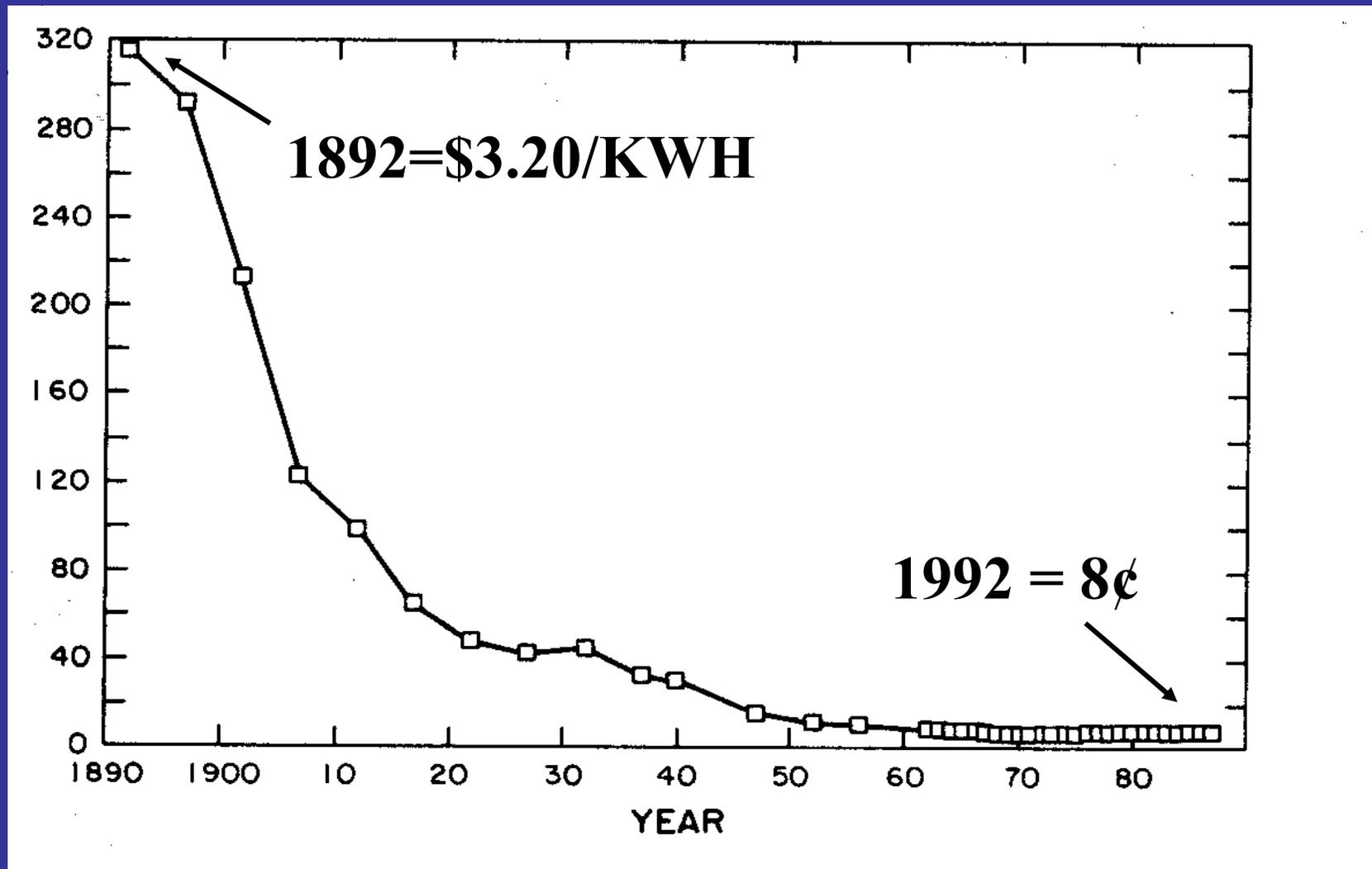




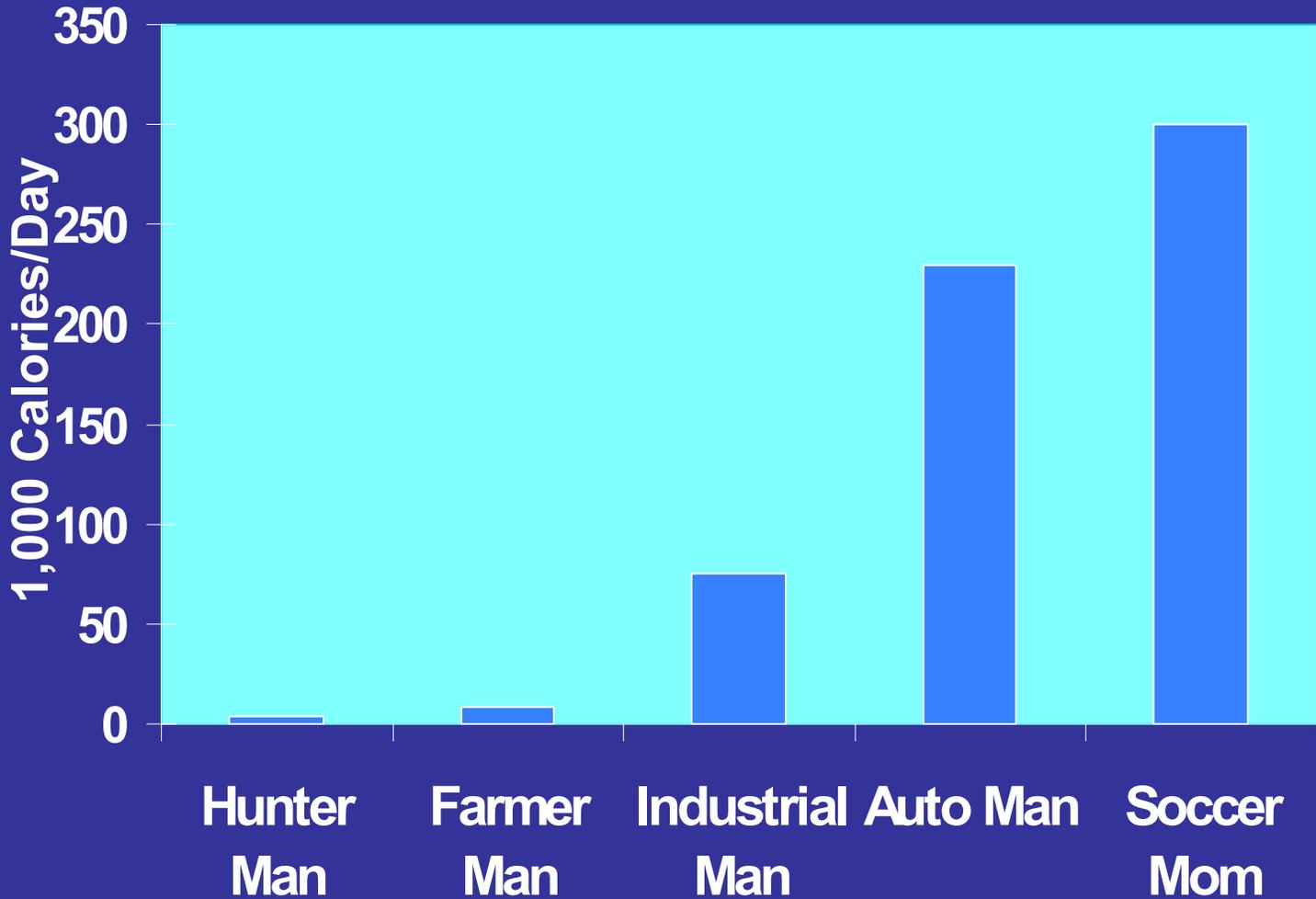




# AN AMAZING CENTURY

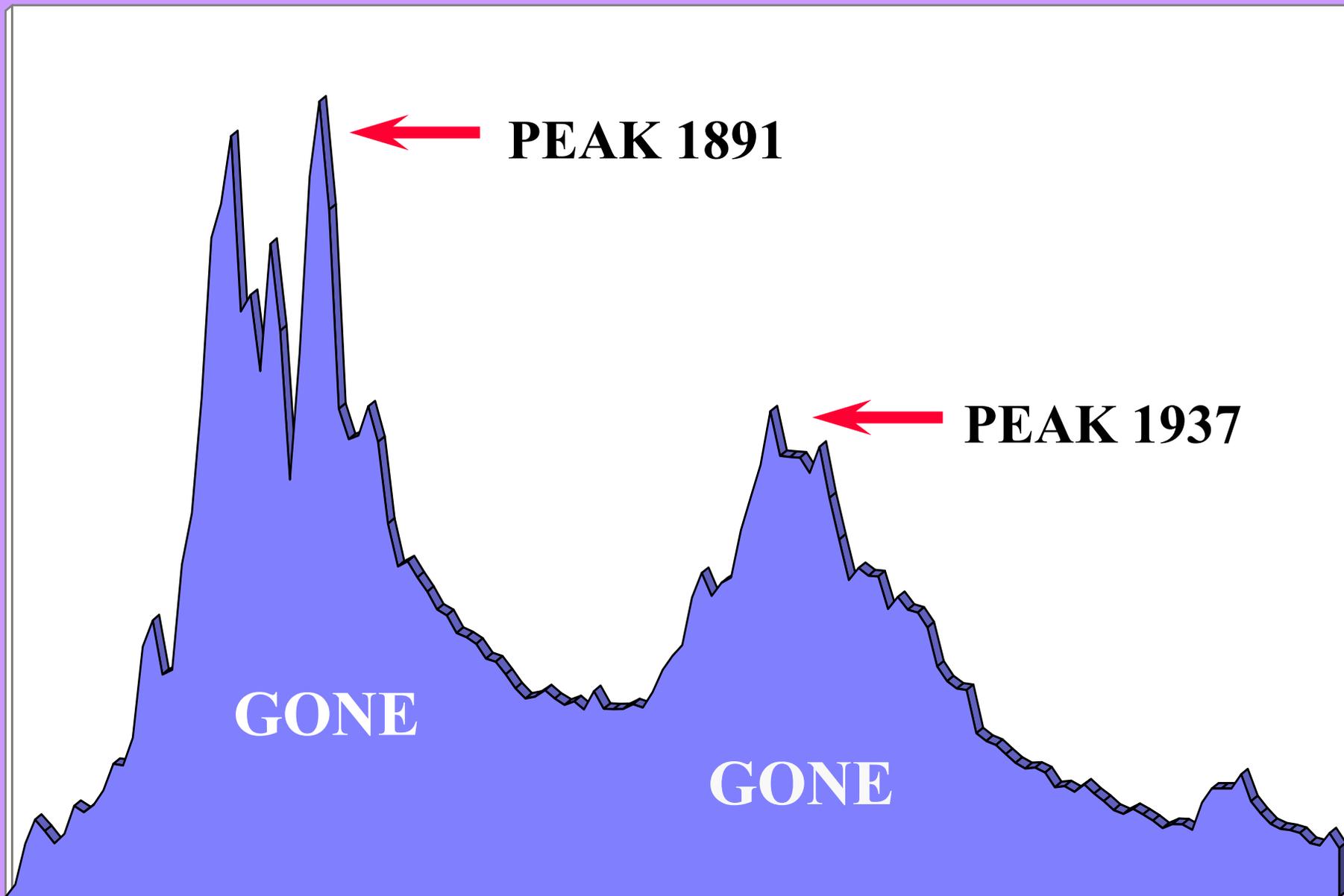


# EVOLUTION OF HUMAN ENERGY USE

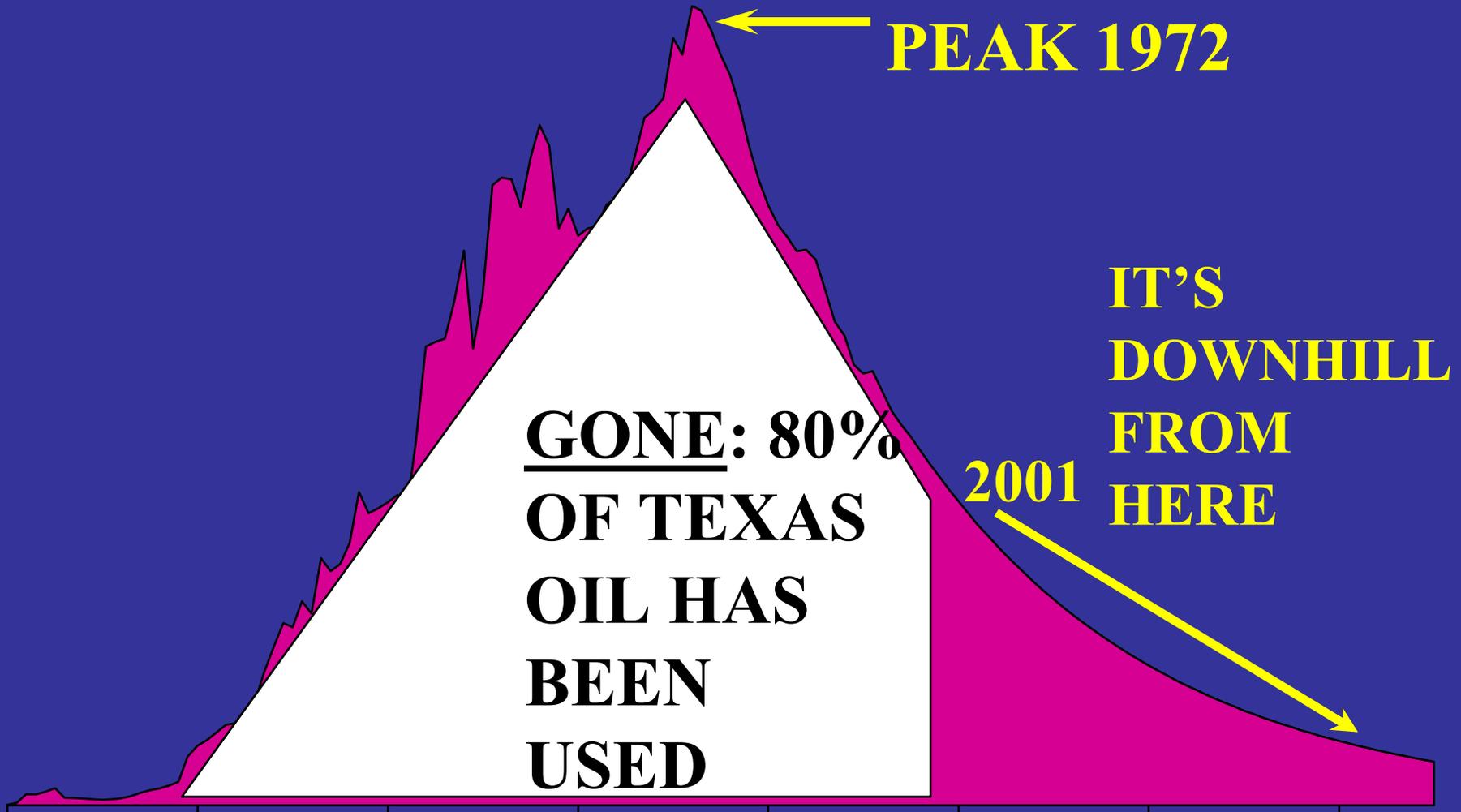




# PENNSYLVANIA OIL PRODUCTION: 1859-1995

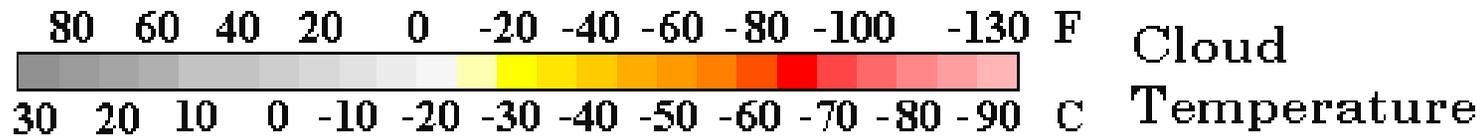
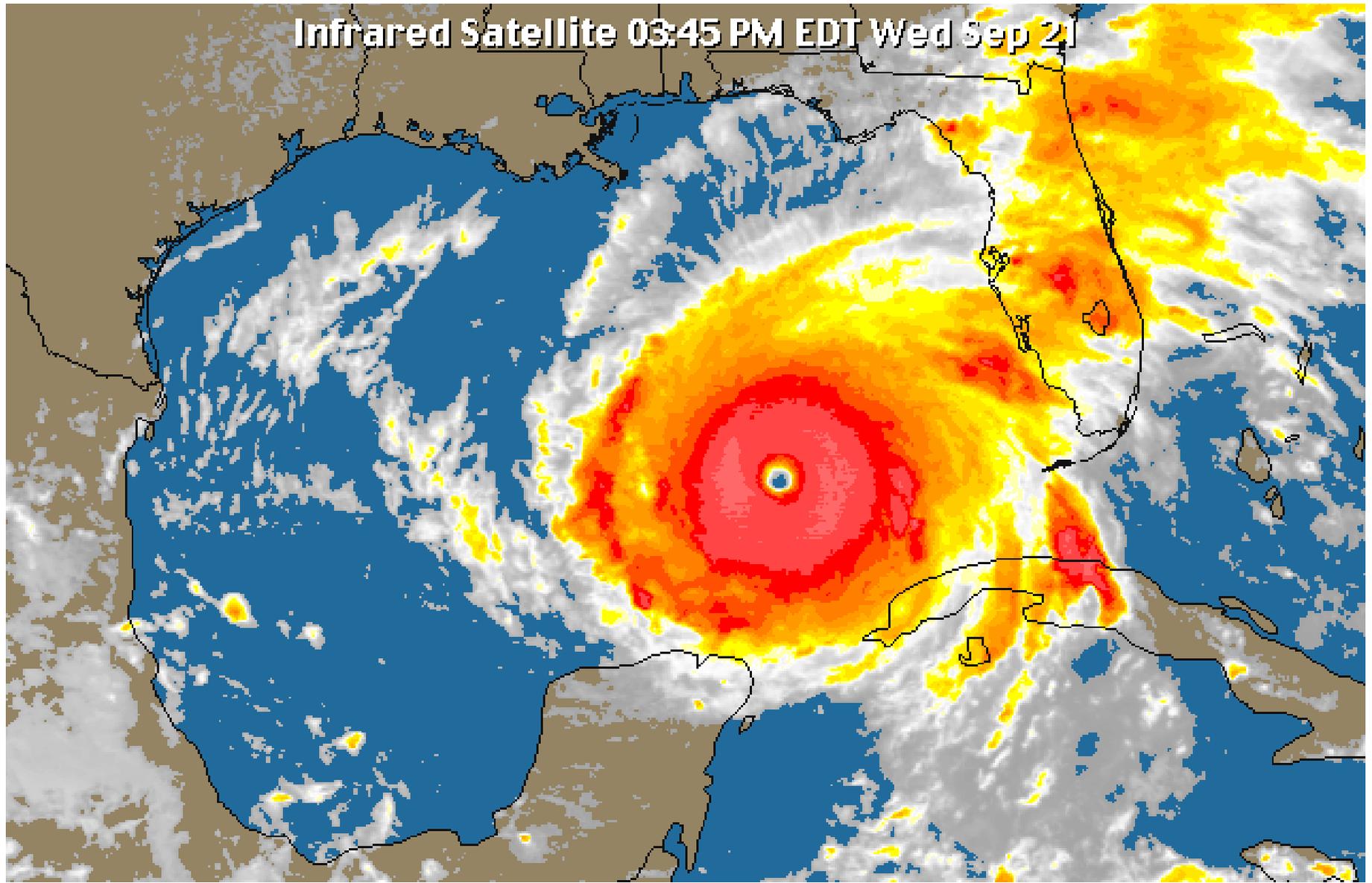


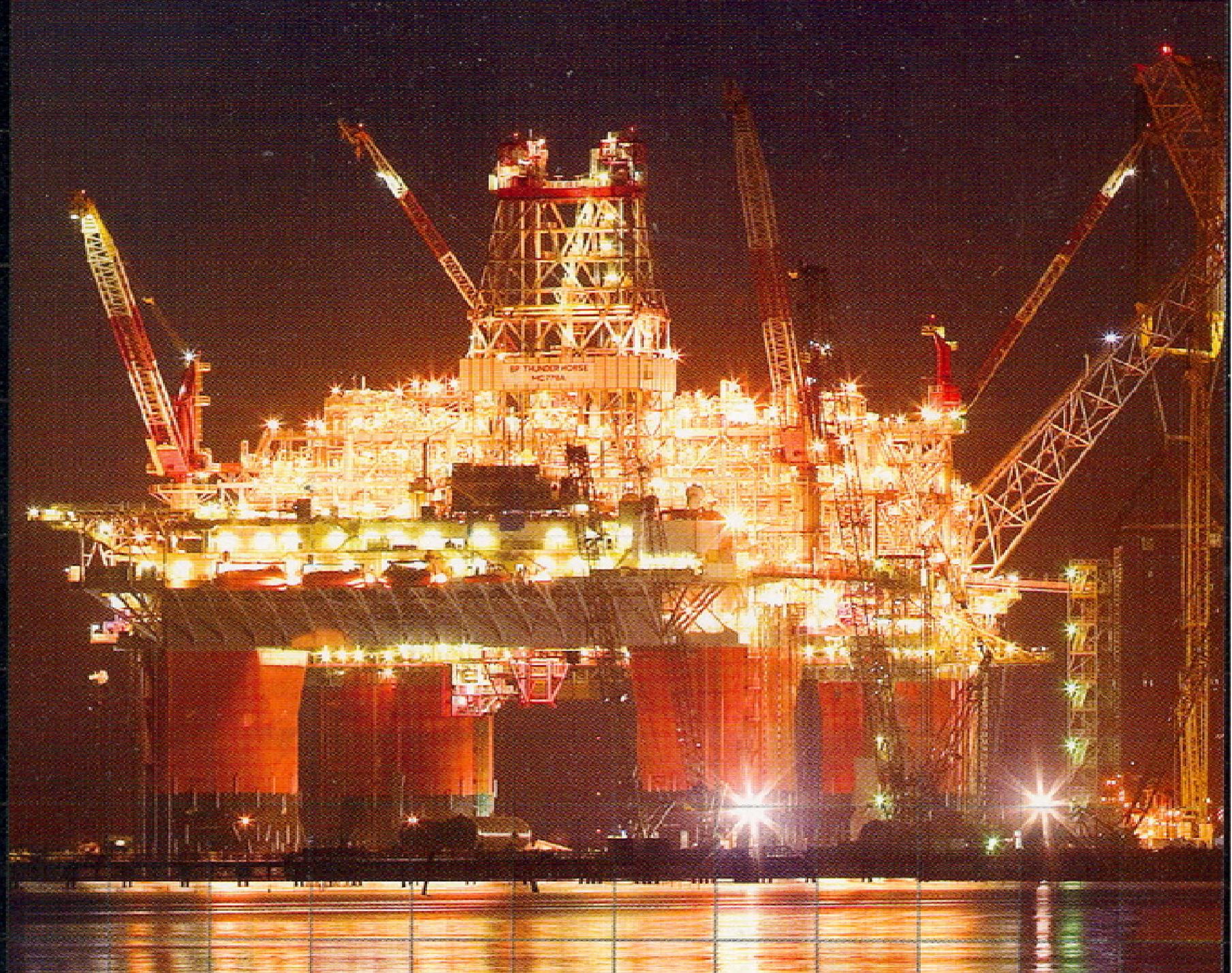
# TEXAS OIL PRODUCTION 1900-2050





Infrared Satellite 03:45 PM EDT Wed Sep 21





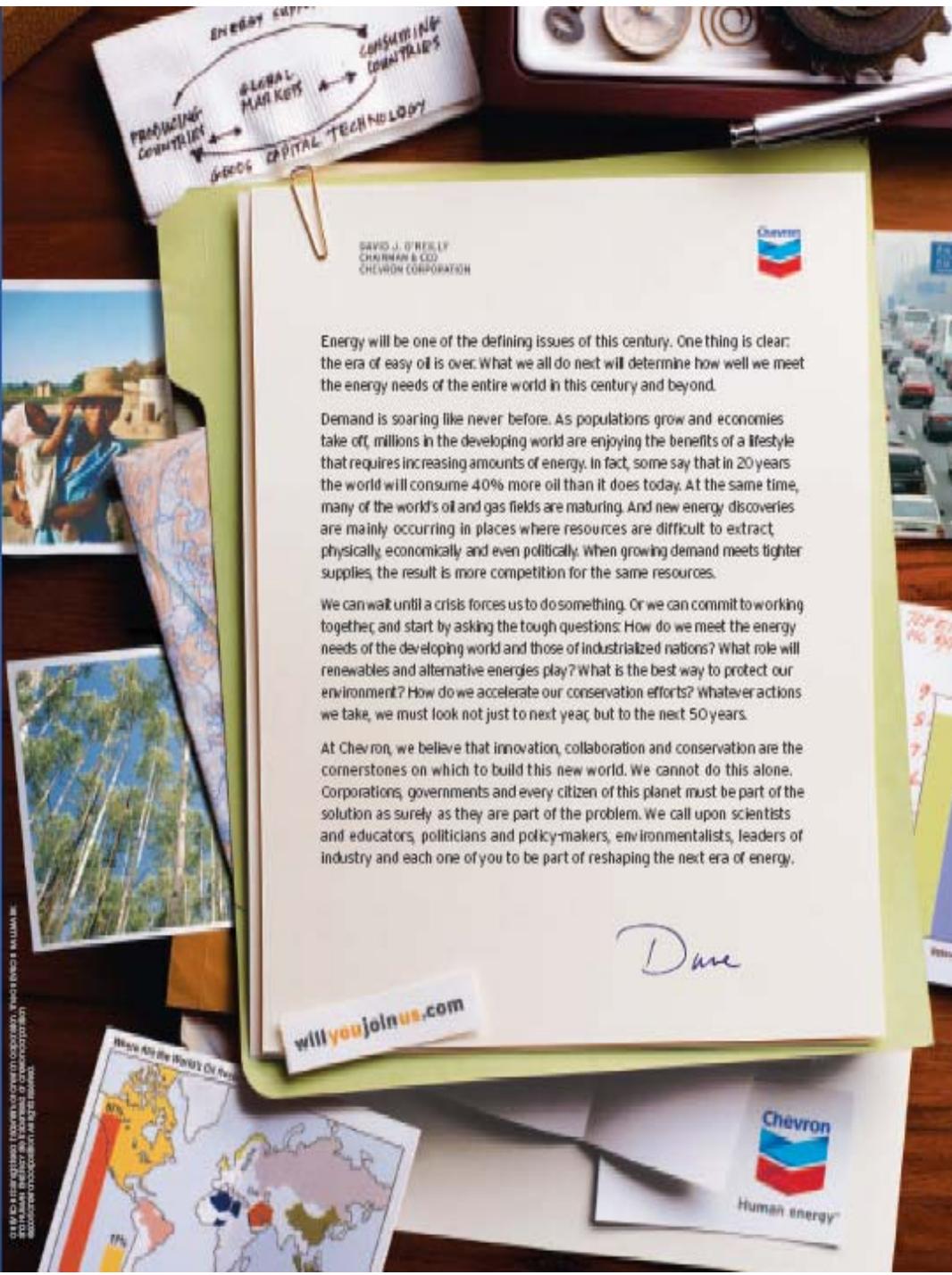


It took us 125 years to use  
the first trillion barrels of oil.

We'll use the next trillion in 30.

So why should you care?

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DAVID J. O'NEIL  
CHAIRMAN & CEO  
CHEVRON CORPORATION



Energy will be one of the defining issues of this century. One thing is clear: the era of easy oil is over. What we all do next will determine how well we meet the energy needs of the entire world in this century and beyond.

Demand is soaring like never before. As populations grow and economies take off, millions in the developing world are enjoying the benefits of a lifestyle that requires increasing amounts of energy. In fact, some say that in 20 years the world will consume 40% more oil than it does today. At the same time, many of the world's oil and gas fields are maturing. And new energy discoveries are mainly occurring in places where resources are difficult to extract, physically, economically and even politically. When growing demand meets tighter supplies, the result is more competition for the same resources.

We can wait until a crisis forces us to do something. Or we can commit to working together and start by asking the tough questions: How do we meet the energy needs of the developing world and those of industrialized nations? What role will renewables and alternative energies play? What is the best way to protect our environment? How do we accelerate our conservation efforts? Whatever actions we take, we must look not just to next year, but to the next 50 years.

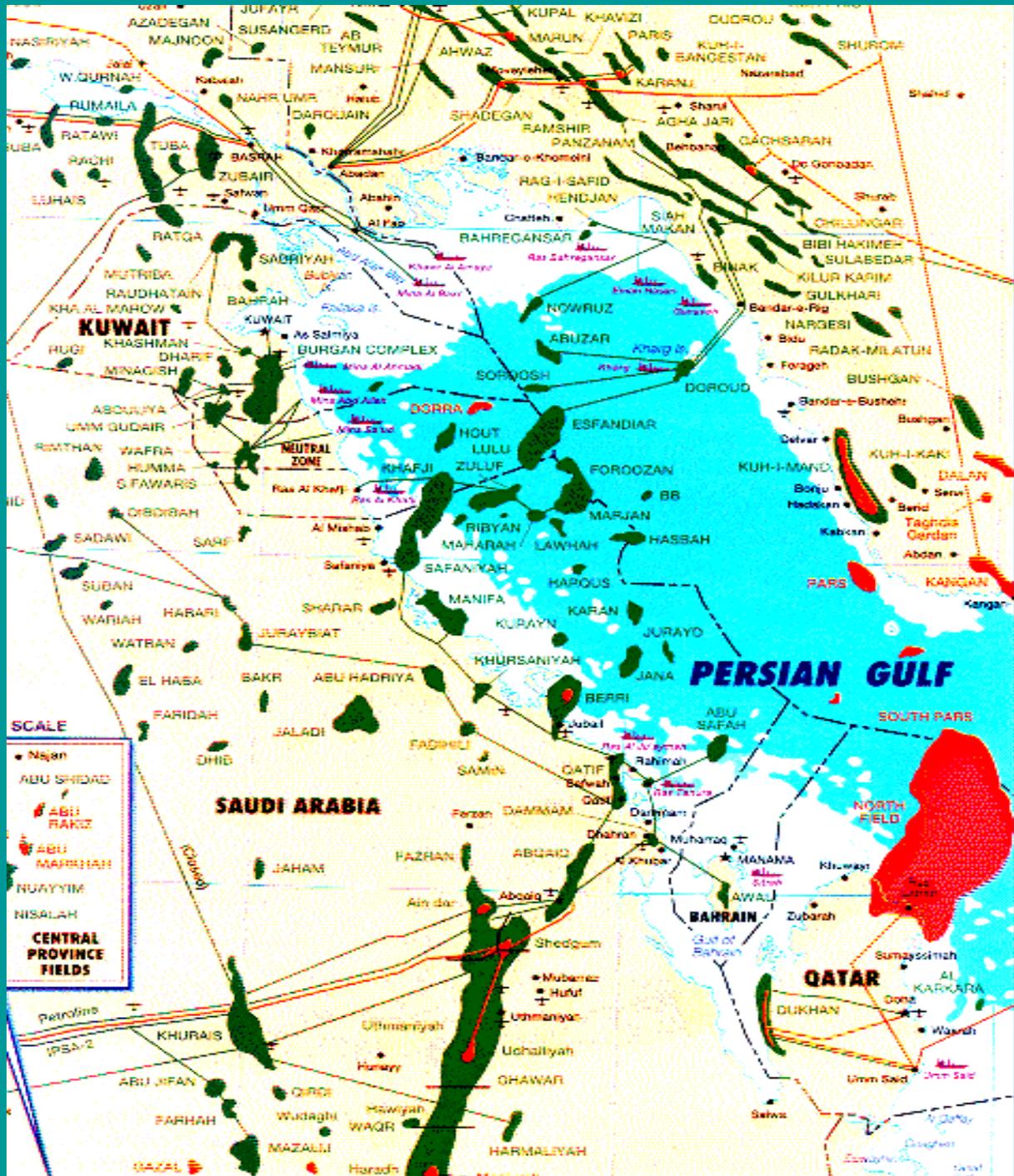
At Chevron, we believe that innovation, collaboration and conservation are the cornerstones on which to build this new world. We cannot do this alone. Corporations, governments and every citizen of this planet must be part of the solution as surely as they are part of the problem. We call upon scientists and educators, politicians and policy-makers, environmentalists, leaders of industry and each one of you to be part of reshaping the next era of energy.

*Dave*

[willyoujoinus.com](http://willyoujoinus.com)







**SCALE**

- Nejan
- ABU SHADDAD
- ABU RAKIZ
- ABU MARBAHA
- NUAYYIM
- NISALAH
- CENTRAL PROVINCE FIELDS**

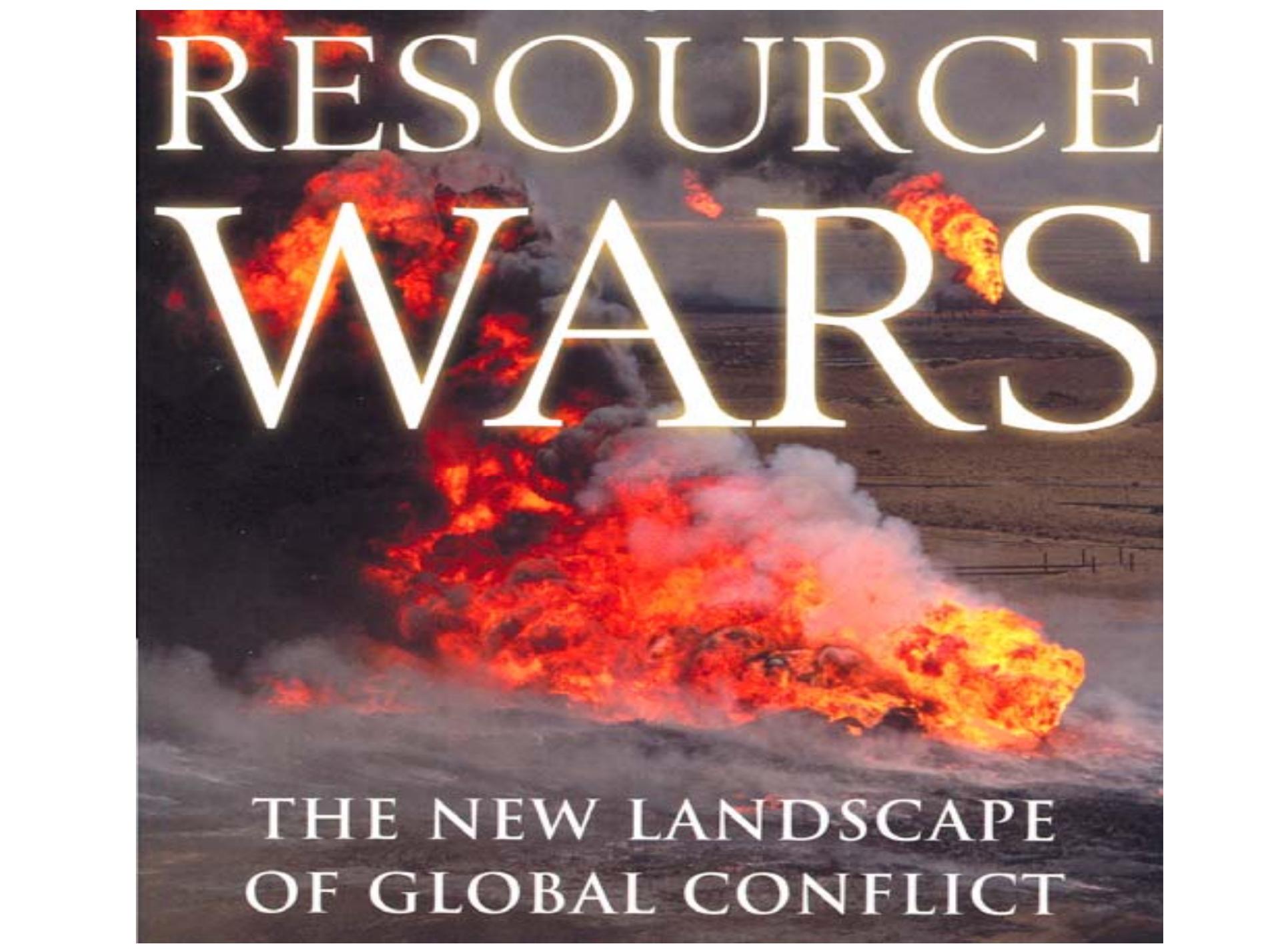


# CRASH

WHEN YOU ARE MOVING AT THE SPEED OF LIFE, WE ARE BOUND TO COLLIDE WITH EACH OTHER.

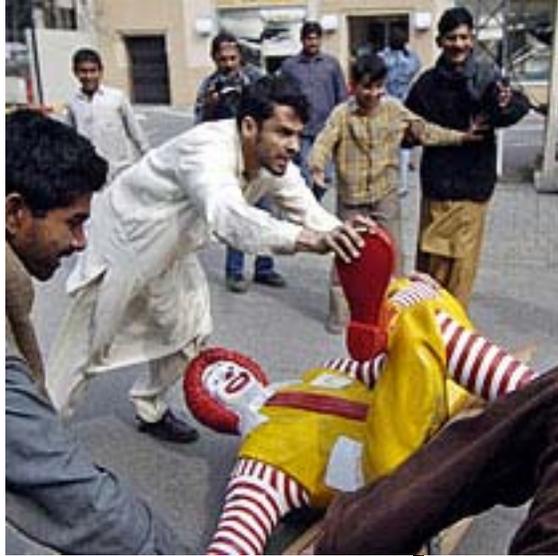
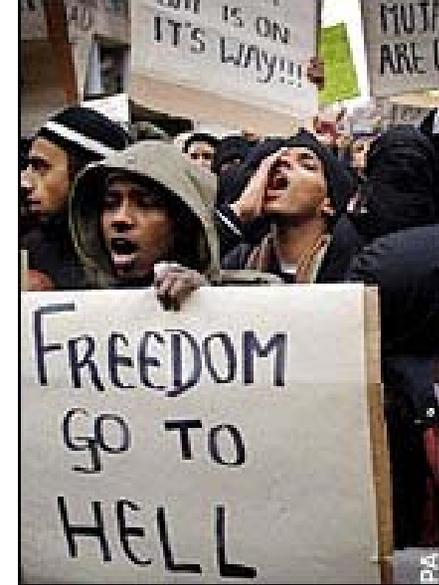
**When moving at the speed of life, we are bound to collide with each other.**





# RESOURCE WARS

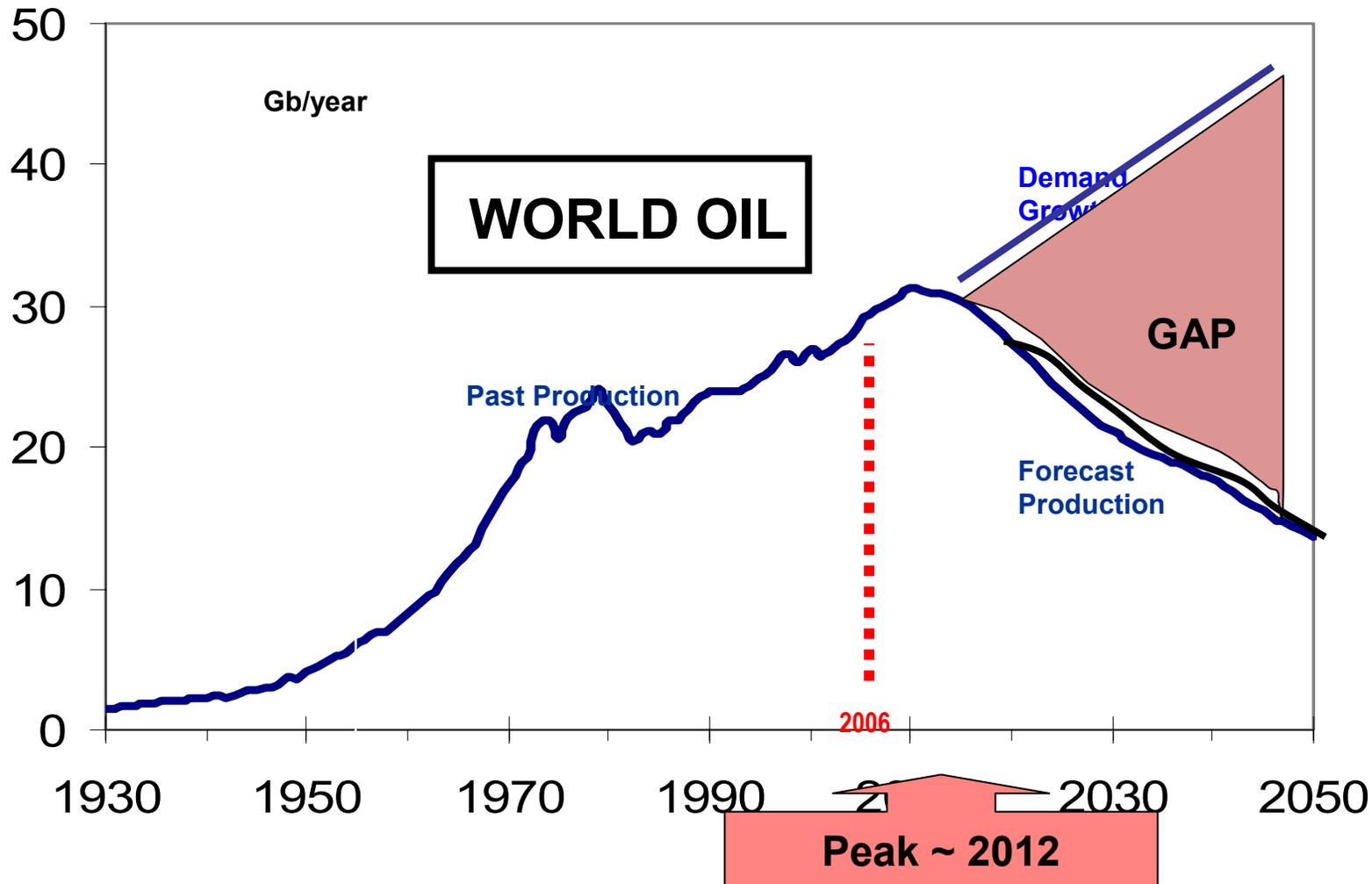
THE NEW LANDSCAPE  
OF GLOBAL CONFLICT





**China was an oil exporter until a decade ago, but by 2030, China's oil imports may equal American imports now.**

# A Chinese View on Peak Oil

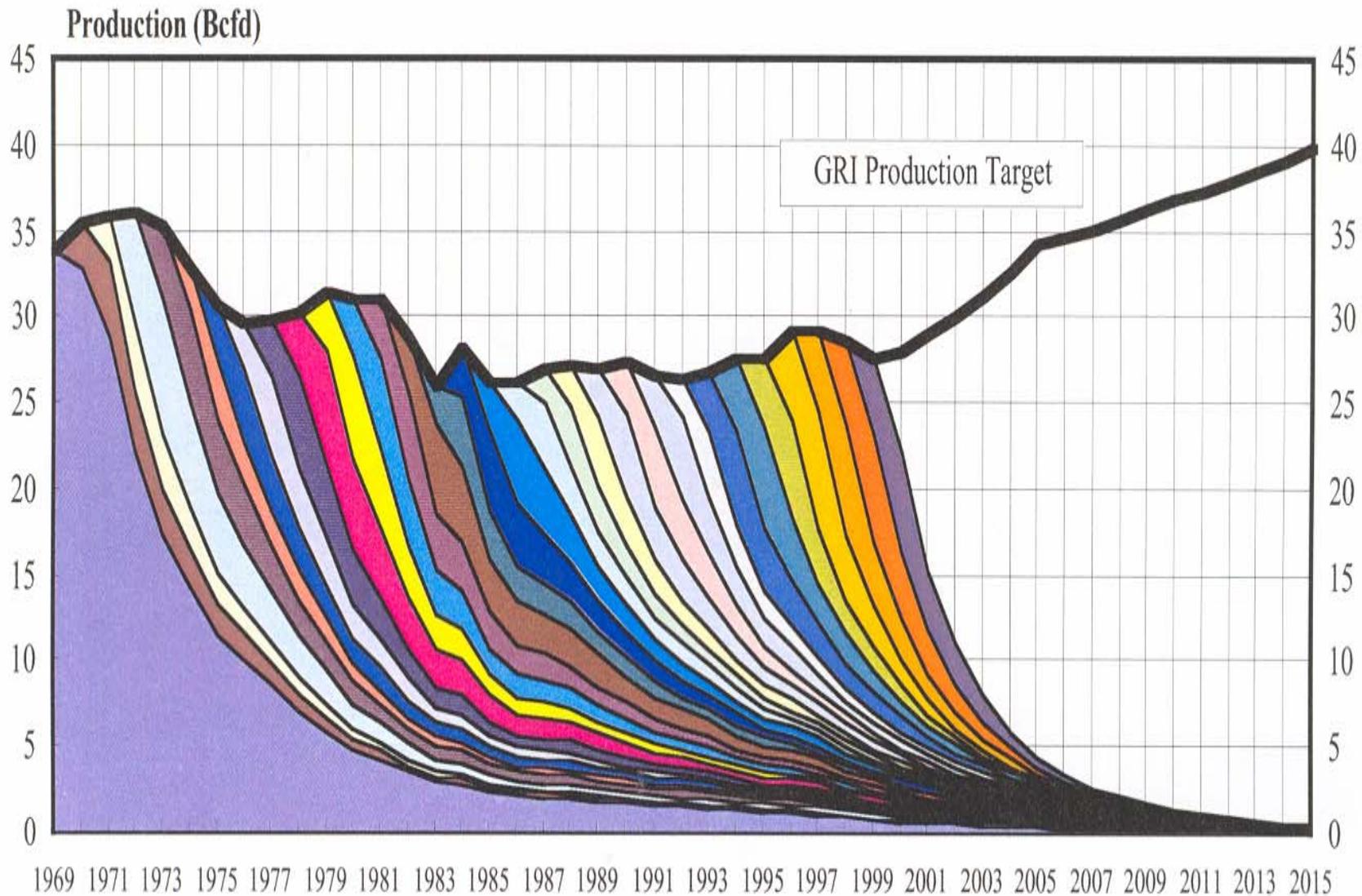


**China is moving aggressively to secure oil supply. New deals with Canada, Iran, Venezuela...**



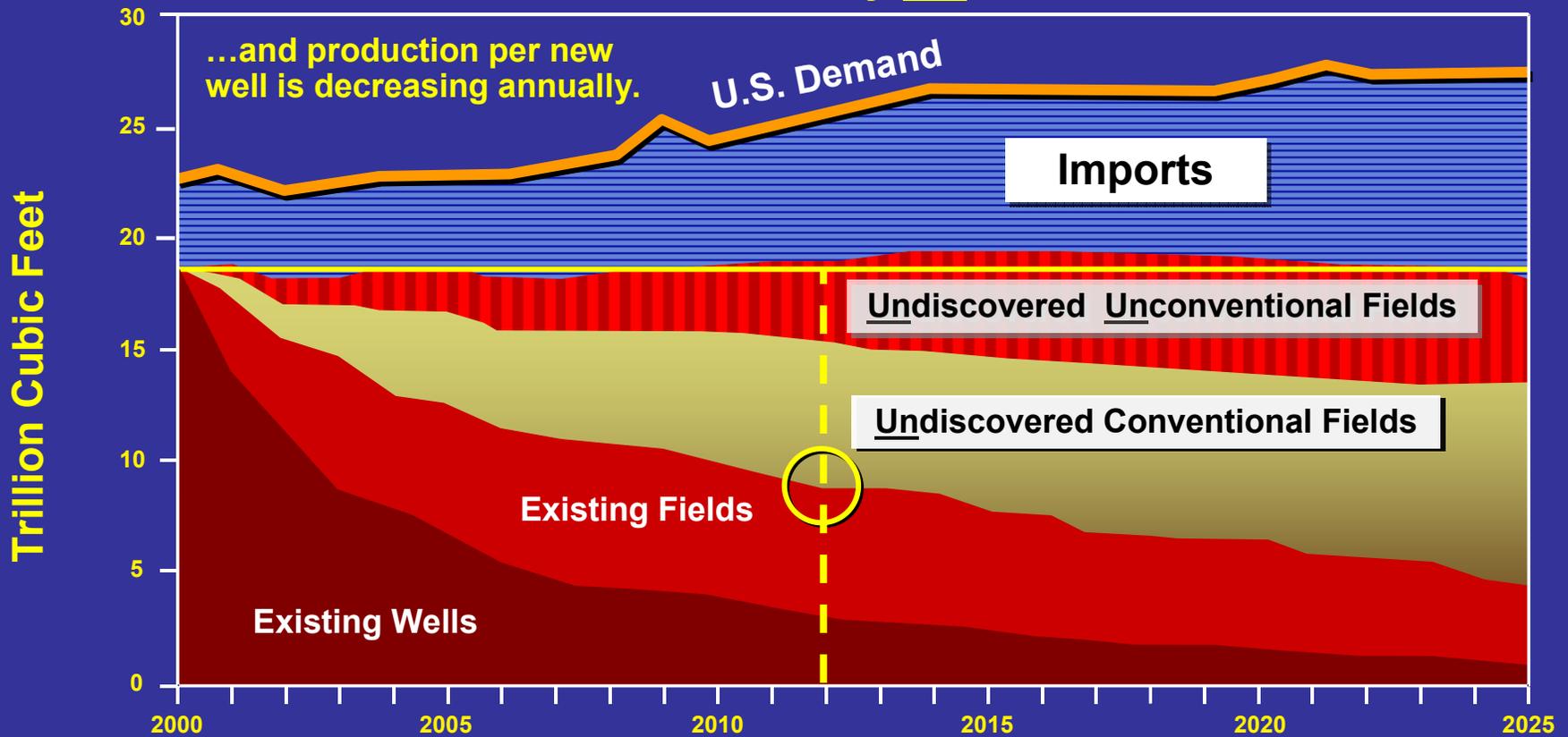


# FORECAST FOR GULF COAST



# Future U.S. Gas Supply

Half of 2012 Domestic Gas Supply Required to Meet Demand is Currently Undiscovered...



LNG Will Add to Imports

\*Source: National Petroleum Council, 2004

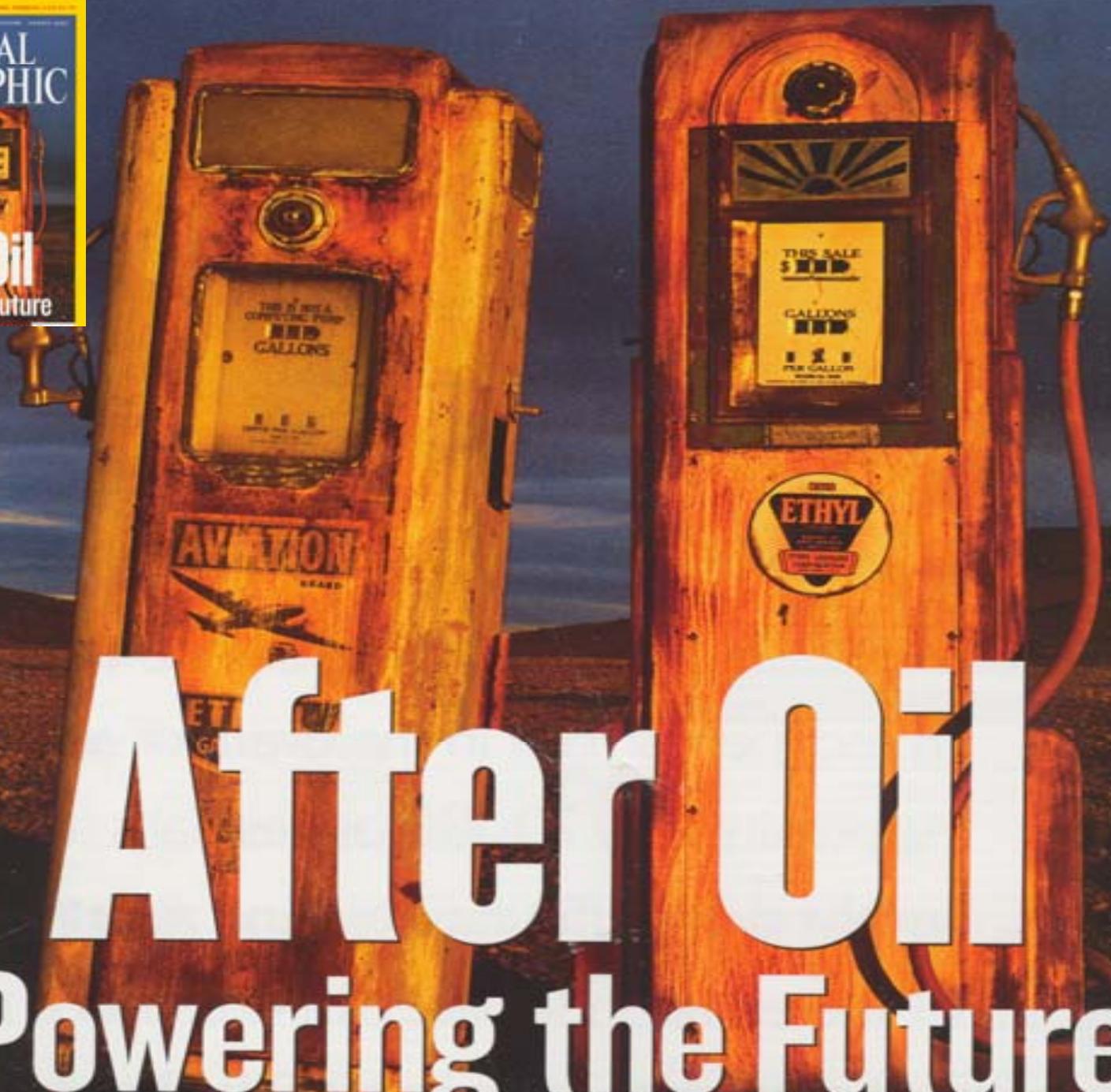
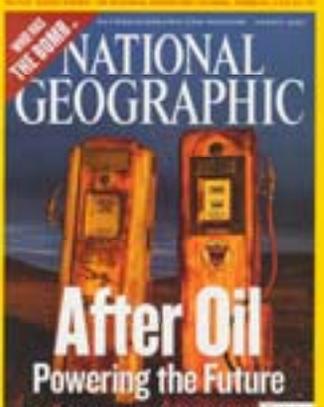


AL ZUBARAH  
الزبير

6



**AG Edwards: “Go to church. Pray for a mild winter.”**

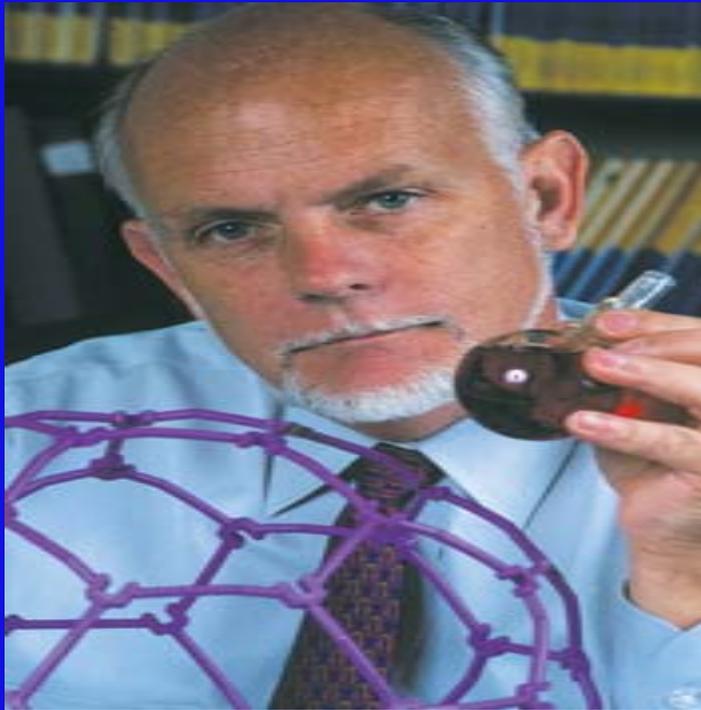


# After Oil

## Powering the Future



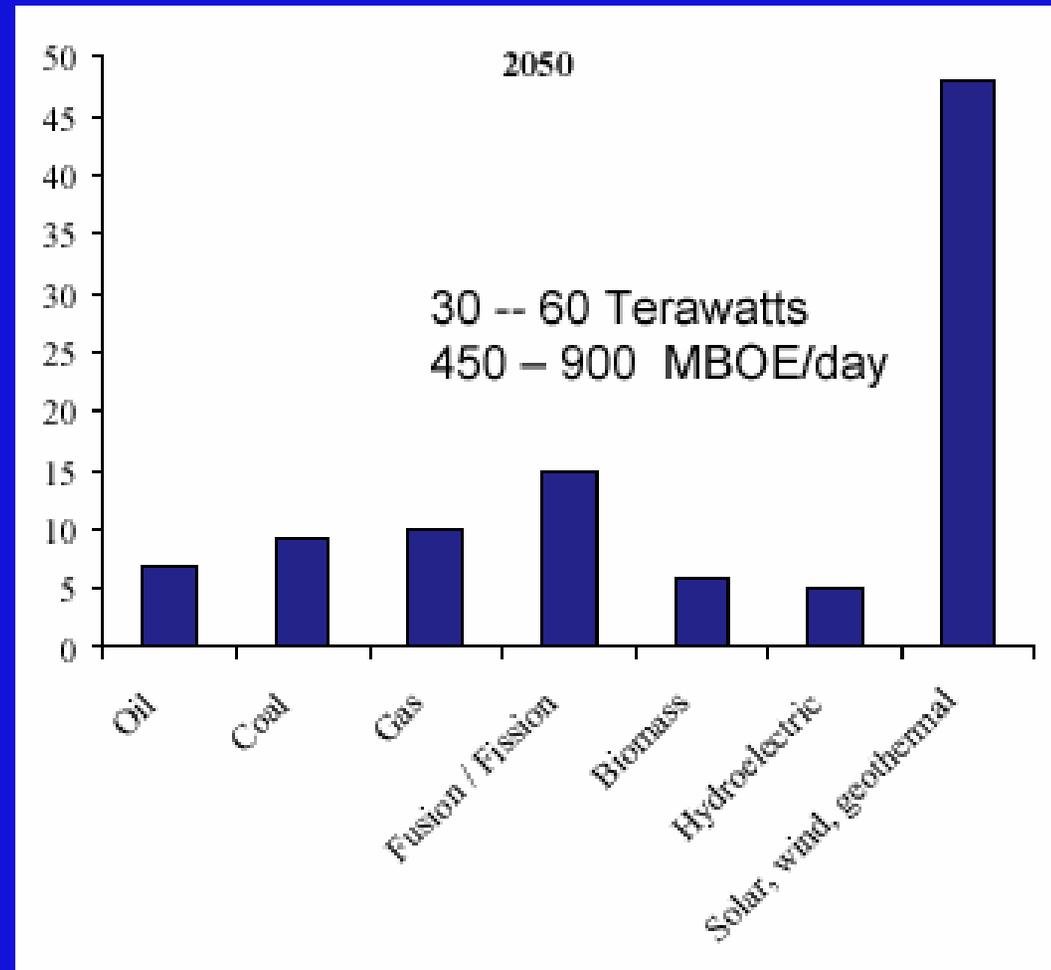
# The ENERGY REVOLUTION (The Terawatt Challenge)



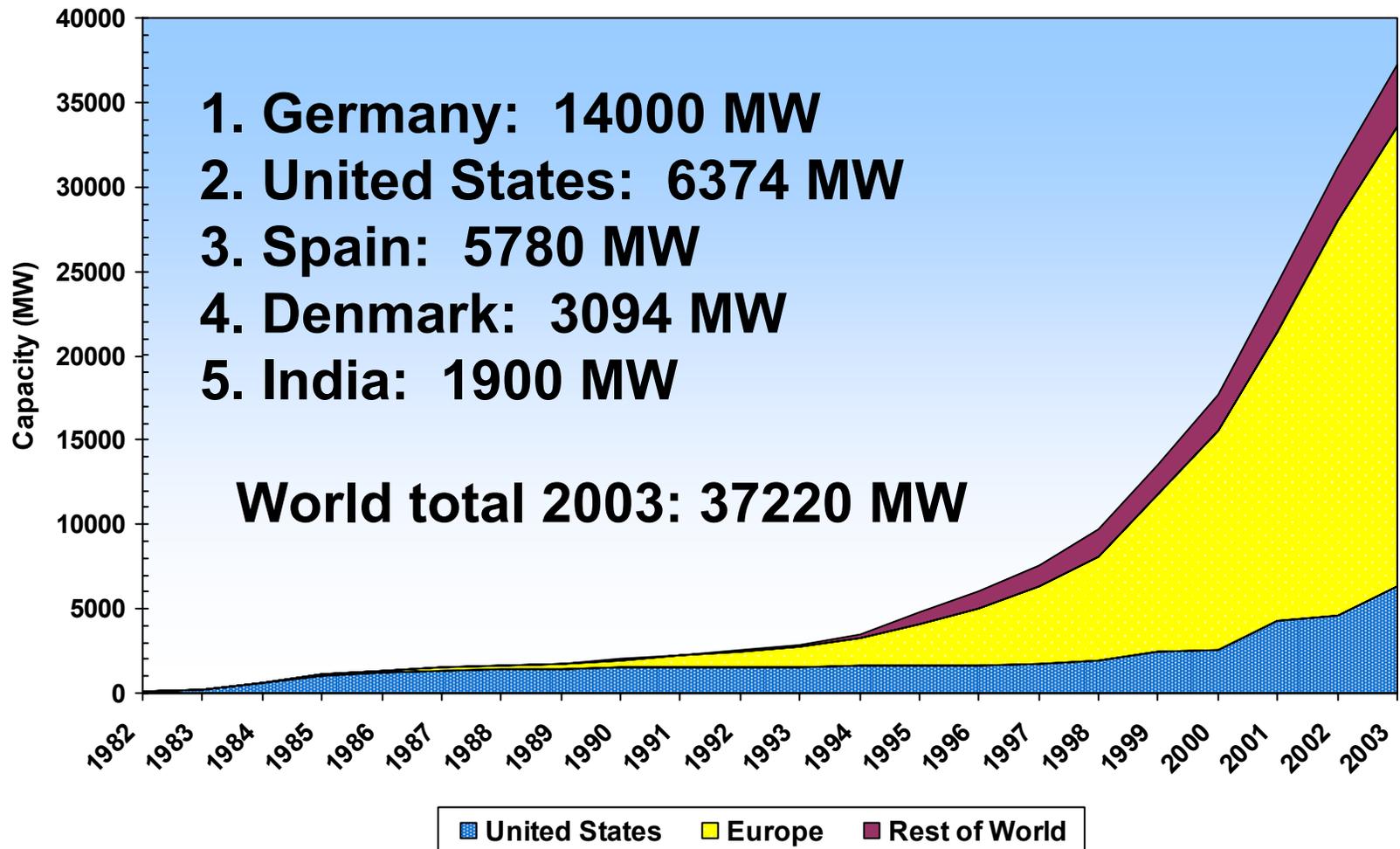
## The Basis of Prosperity

20<sup>st</sup> Century = OIL

21<sup>st</sup> Century = ??



# World Growth Market





I am an ecologist, fascinated by energy. A predator cannot expend more energy in chasing prey than it gets from that prey...

# Cost of Finding New Oil

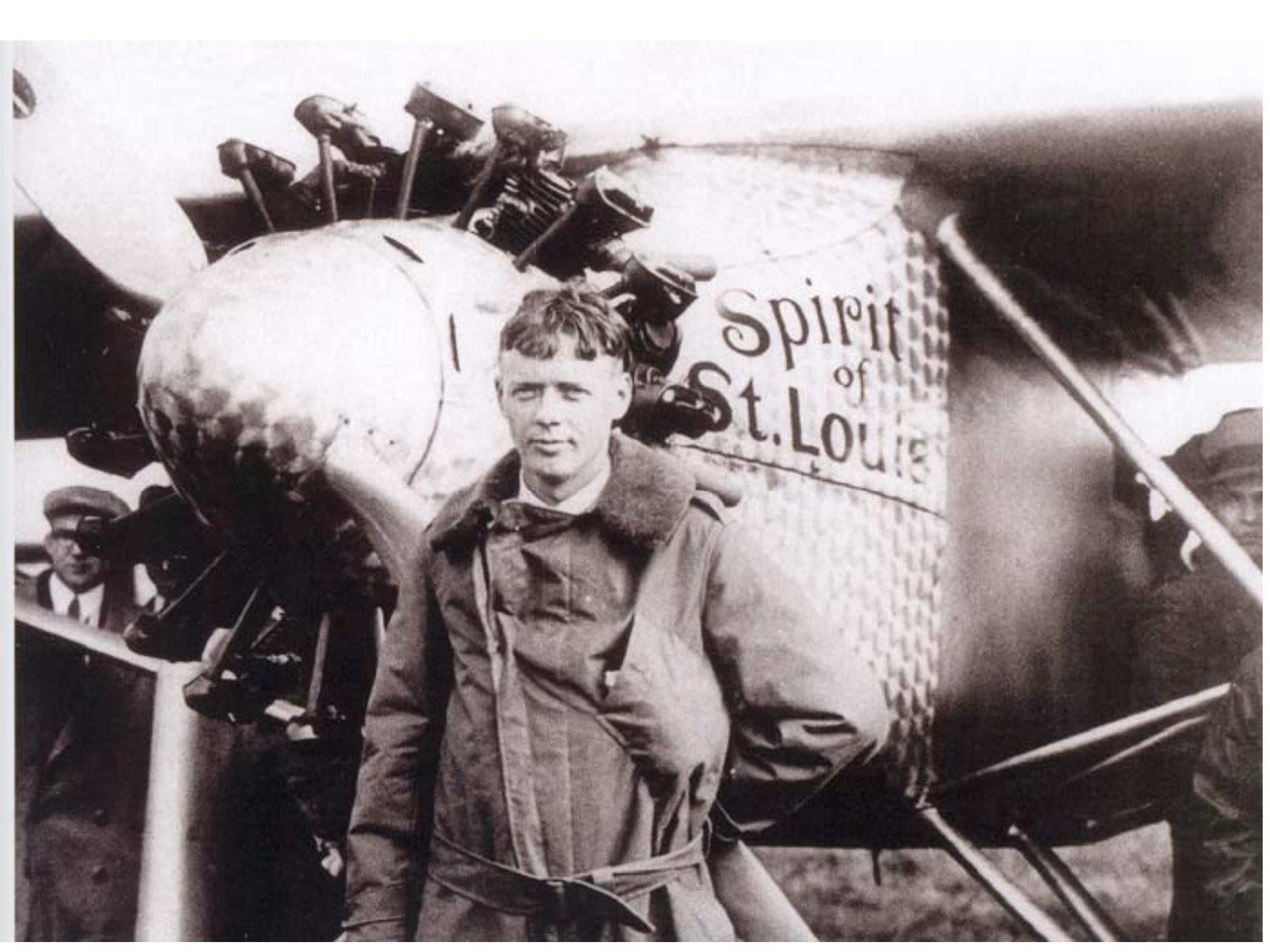
In 1930 U.S. got 100 barrels of oil back for each barrel invested in seeking it

- In 1970 about 25:1
- In 1990s about 15:1
- Today... perhaps 3:1
- Ethanol... 2:1
- Coal Liquefaction 1:2



**Wind? 30:1, 40:1, 50:1**





Spirit  
of  
St. Louis

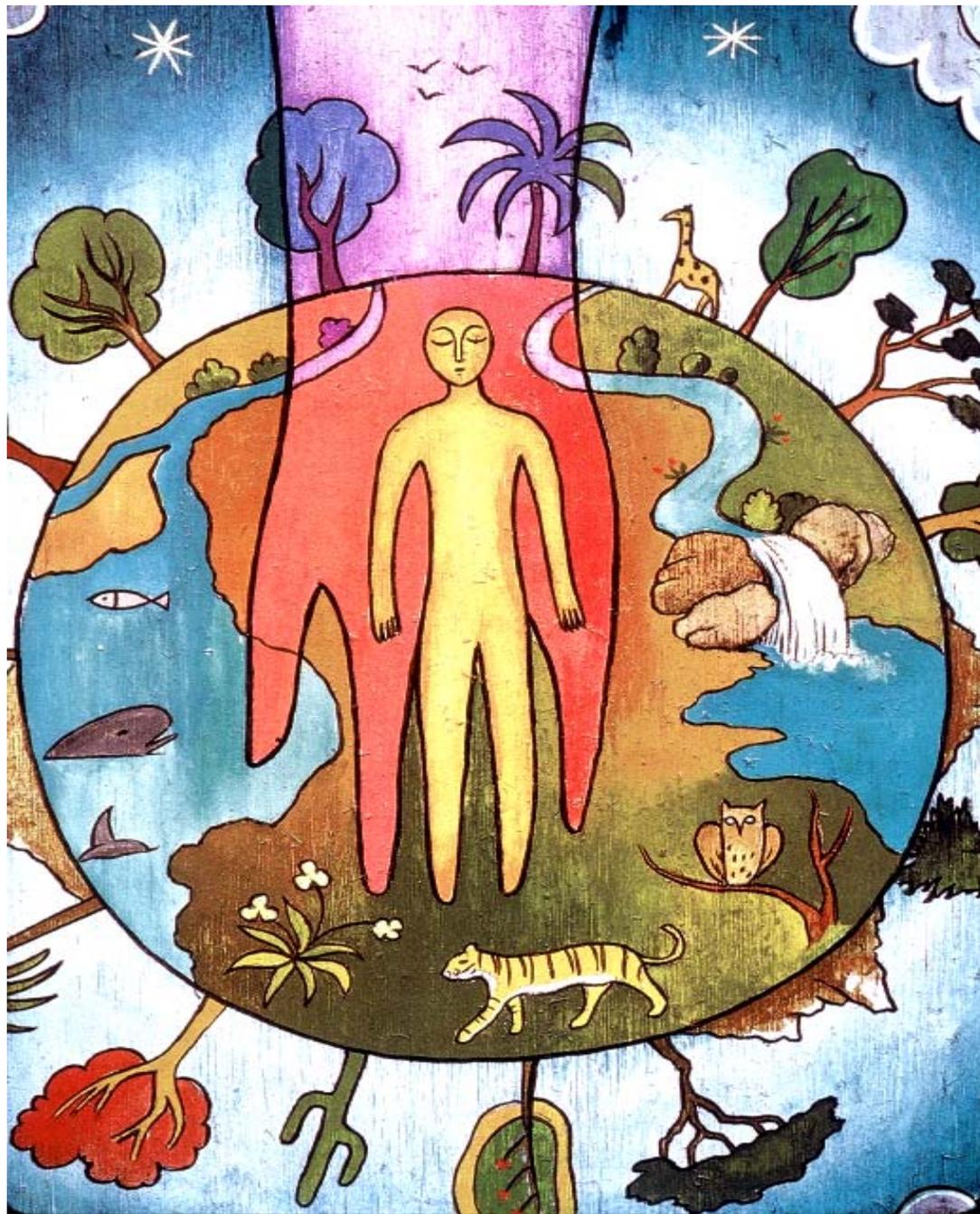
**Efficiency and  
renewables are no longer  
just “choices”**

**Prosperity is at risk.  
What was once optional  
has become inevitable...**

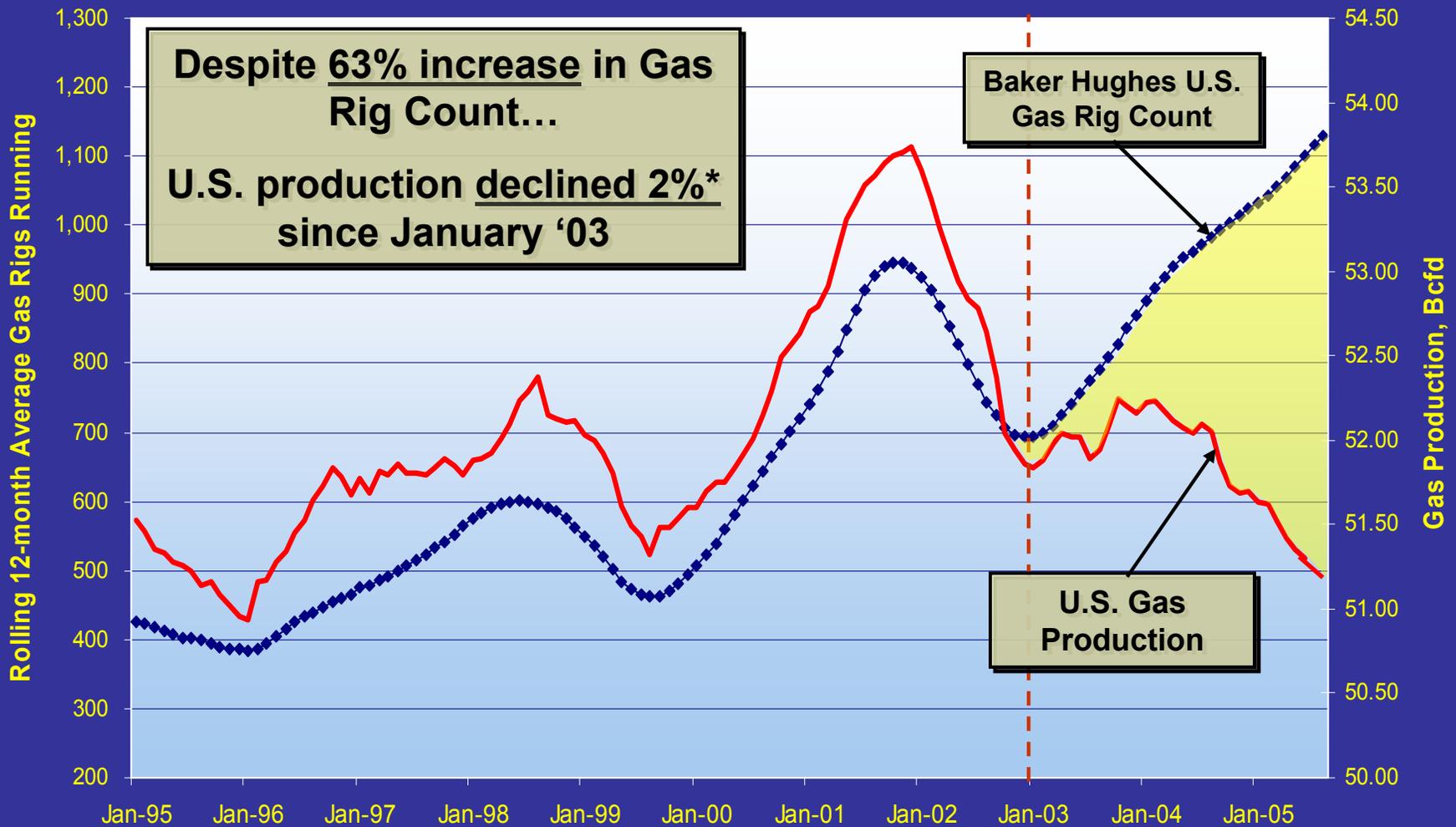
**No time to waste. Need  
to get started.**

**Energy is our most  
precious resource.**





# U.S. Natural Gas Production



\*Based on Trailing 3 month average

Source: Baker Hughes, EIA/DOE (2004 and 2005 production volumes are EIA estimates)

# Americans and Energy



**News Flash:  
“Power Outage  
at Mall, 30  
Stranded on  
Escalator”**



“Lance has a top end of about 600 watts. He can produce 1200 watts for a very short time, less than 20 seconds.

He can maintain 500 watts for 30 minutes going uphill. No one else in the world can do that consistently.”

# World Oil<sup>®</sup>

Gulf Publishing Company

EXPLORATION

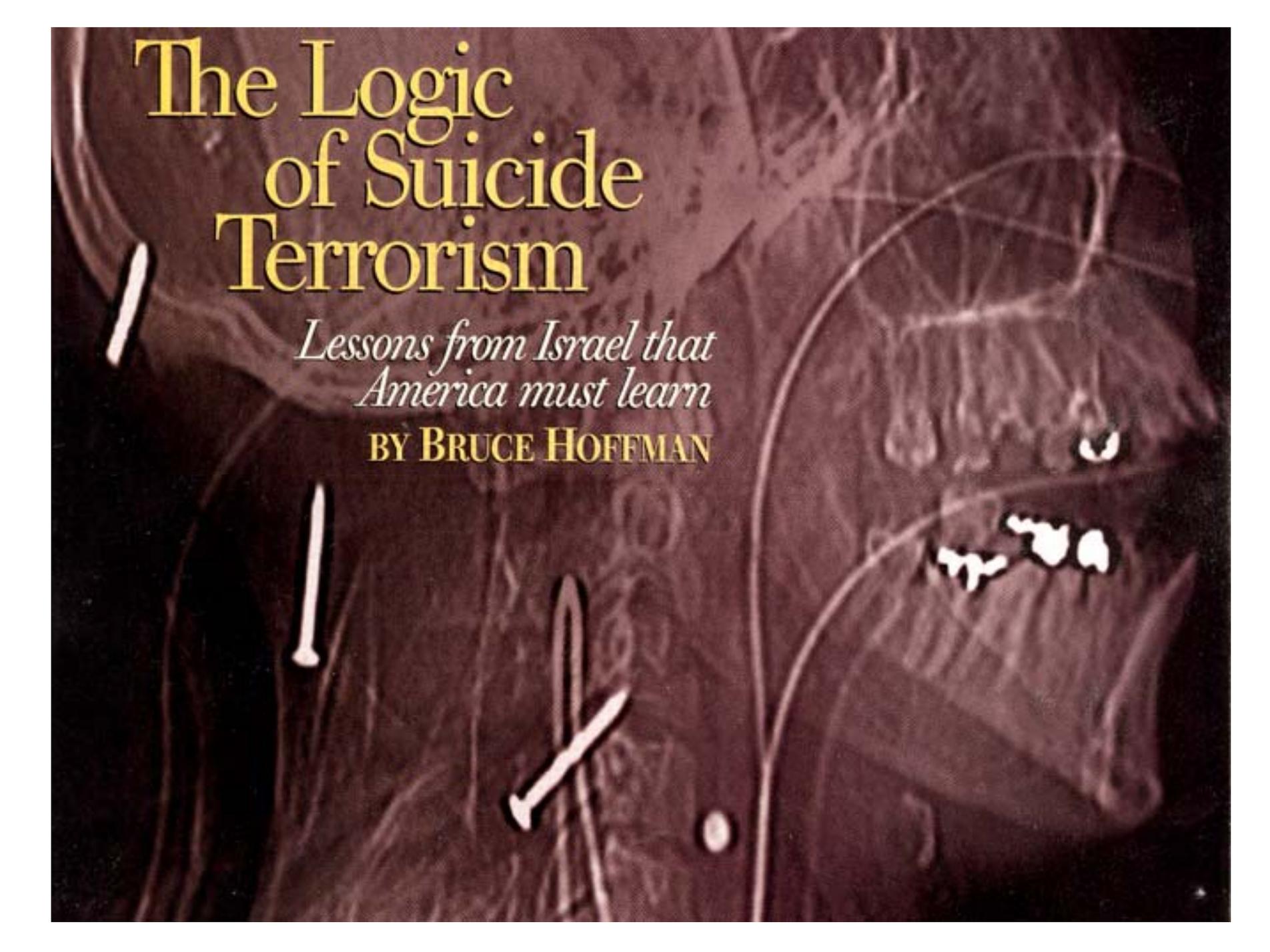
DRILLING

PRODUCTION

**“2005 will go down in history books as perhaps the poorest year for exploration since World War II...”**

**Exploration  
Report**





# The Logic of Suicide Terrorism

*Lessons from Israel that  
America must learn*

**BY BRUCE HOFFMAN**