

America's sources of energy—what will the future be?

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Abstract:

Where will America's future electricity supply come from? According to Vice President Cheney's energy task force, the U.S. needs to build about one 1 GW generating facility a week in perpetuity.⁽¹⁾ What sort of facilities will they be? Can the economy sustain such growth? Are there other possibilities? One possibility that strikes a chord with physicists is conservation as a source of energy. In this regard, Vice President Cheney famously said that conservation is "a sign of personal virtue, but it is not a sufficient basis—all by itself—for a sound, comprehensive energy policy,"⁽²⁾ echoing the Ayn Rand Institute's view that "Conservation is not a long- or short-term solution to the energy crisis. Conservation is the un-American idea of resigning oneself to doing with less."⁽³⁾ This talk will explore the possible energy futures, their advantages and disadvantages, with and without conservation.

1. National Energy Policy Development Group (R. Cheney, C. L. Powell, P. O'Neill, G. Norton, A. M. Veneman, D. L. Evans, N. Y. Mineta, S. Abraham, J. M. Allbaugh, C. T. Whitman, J. B. Bolten, M. E. Daniels, L. B. Lindsey, and R. Barrales), *National Energy Policy: Report of the National Energy Policy Development Group*, (Washington, DC: Government Printing Office, 2001).

2. M. Allen, "Bush energy plan will emphasize production," *The Washington Post*, 1 May 2001

3. R. Pool, "Saving power deemed immoral," *The Los Angeles Times*, 12 May 2001.

Plan of the presentation

Introduction

State of energy (2004-2005)

- Fossil fuels

- Nuclear

- Renewable

Supply issues

- Where is coal?

- Where is oil?

- Where is uranium?

Consequences of use

- Fossil fuels

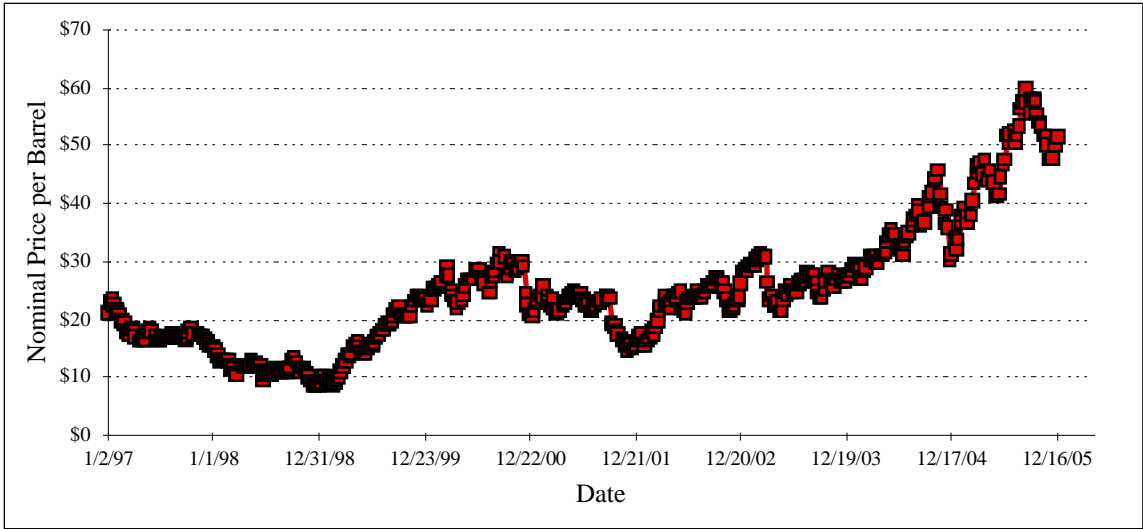
- Nuclear

- Renewable

Consequences of foreign dependence

Can the past trends continue?

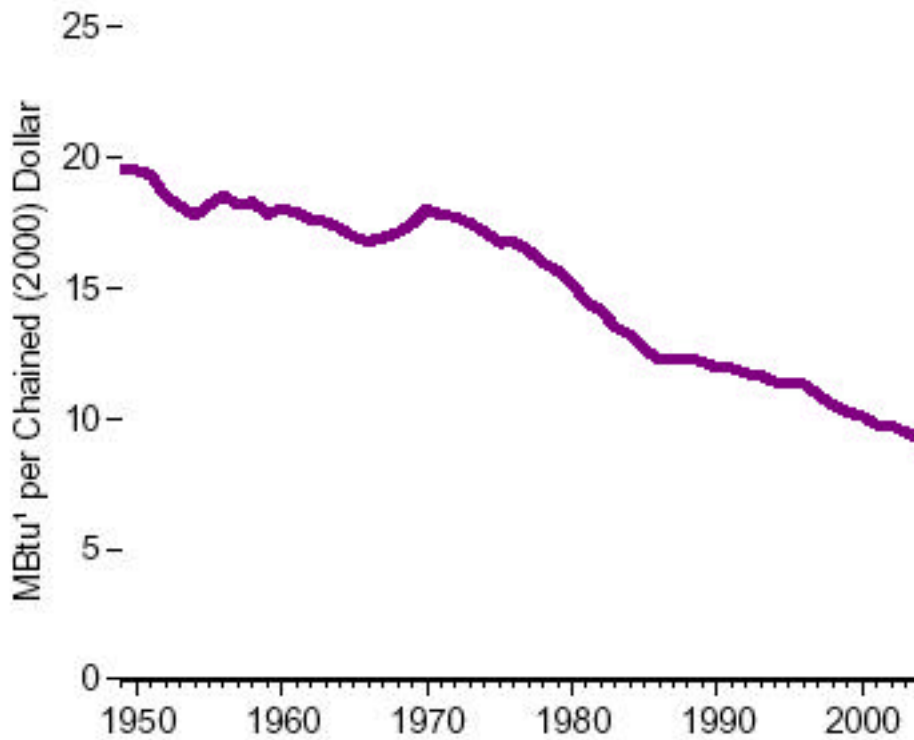
What could a solution look like?



US energy consumption per capita

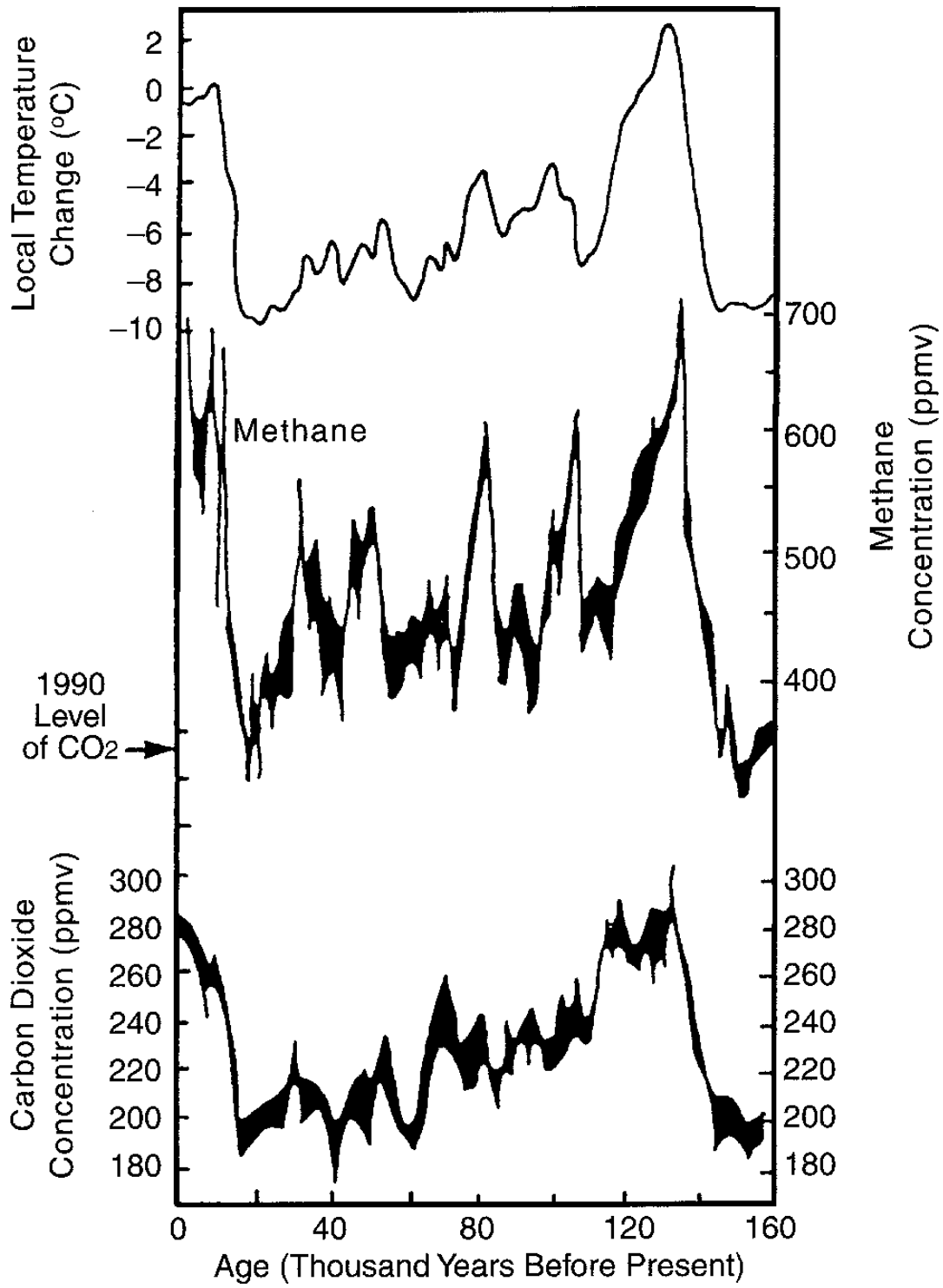


Energy consumption per unit of GNP

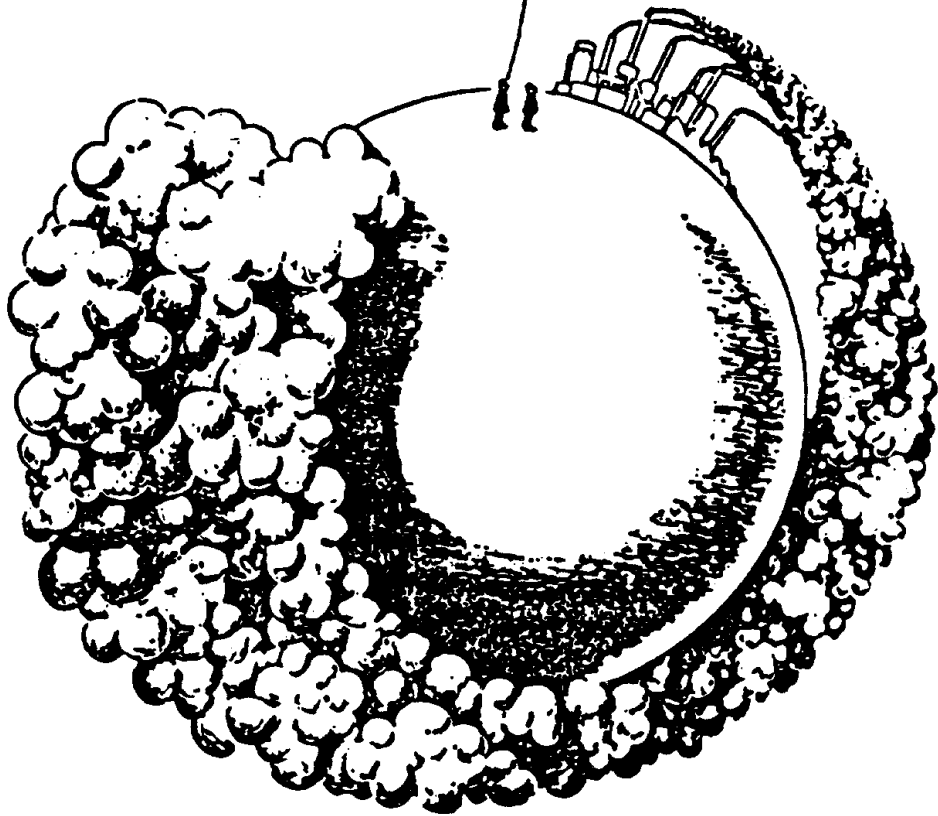


US energy expenditures per capita





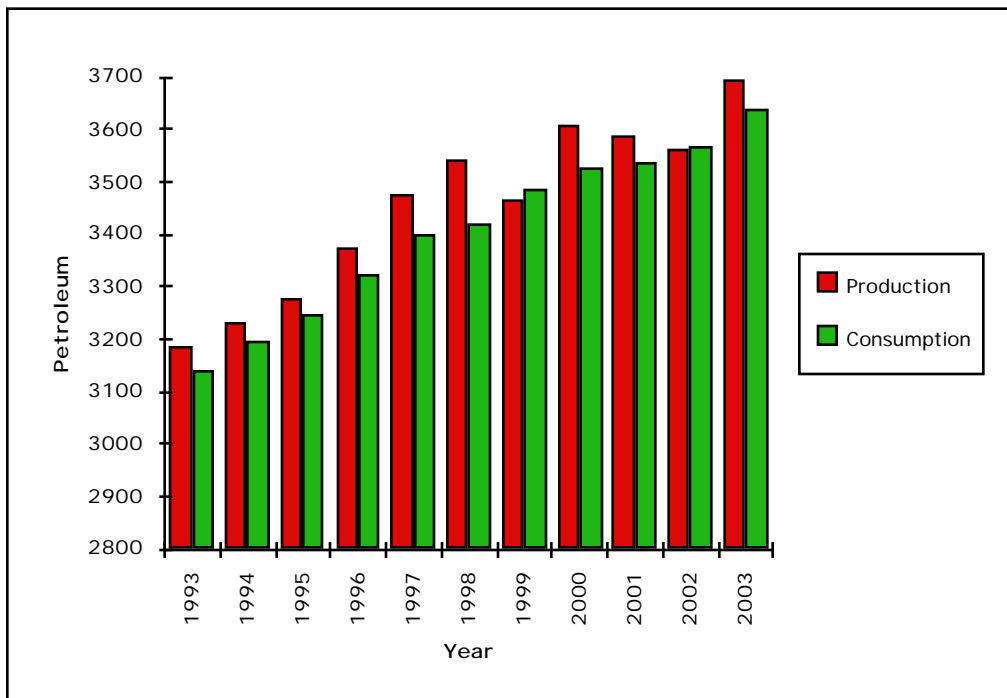
WE DON'T HAVE TO WORRY ABOUT AIR
POLLUTION AS LONG AS THE WIND'S
IN THE RIGHT DIRECTION.



The big picture:

China and India are demanding more oil.

Margins are shrinking.



There ain't no such thing as a free lunch.

Do I have a solution?

Not one, many.

But they can be covered by one word.

CONSERVATION

Let's see what others say.

Vice president Cheney famously said:

“As a country, we have demanded more and more energy. But we have not brought on line the supplies needed to meet that demand.”

Cheney said telling Americans to do more with less is not enough. “Conservation may be a sign of personal virtue, but it is not a sufficient basis for a sound, comprehensive energy policy.”

Richard Benedetto, USA TODAY, 05/01/2001

Here’s what Cheney went on to say later:

“And there are several paragraphs where I talked about conservation, how important conservation was, about our tremendous record in conservation as a nation over the last 30 years we've grown our economy 126 percent, and only increased energy demand 26 percent; we have to be much more efficient. At the very tail end of that, I said, but it's not enough. Conservation won't close the gap; we also have to produce more supply. And we've been very consistent.

“Go back and look at the report, at the energy report we turned out, which was drafted before I ever gave the speech in Toronto. We've got a long chapter on conservation before we ever get to talking about increased supply, so we have been consistent on it. It's just not everybody read the report, and sometimes quotes were taken out of context.”

Newshour, 18 July 2001

Yaron Brook, the Ayn Rand institute's executive director, didn't back away, though:

“Expecting the American people to lower their standard of living is an immoral idea.”

“Conservation is not a long- or short-term solution to the energy crisis. Conservation is the un-American idea of resigning oneself to doing with less—like a sick person who stops seeking a cure and resigns himself to living with his illness.”

[M]arket forces should prevail to increase power supplies and reduce demand. [Ayn Rand's] novel “Atlas Shrugged” features a countrywide blackout that is the result of massive government economic regulation. Rand writes on page 1,075 of towns “reduced to the life of those ages in which artificial light was an exorbitant luxury and a sunset put an end to human activity.” The towns were ruined by “rations, quotas, controls and power-conservation rules.”

R. Pool, “Saving power deemed immoral,” *The Los Angeles Times*, 12 May 2001

What do I say?

- CAFE standards work; raise them to at least Chinese standards
- 60 mi/gal cars are not “new” technology
- Appliance standards (movement started in California) have saved building many power plants
- Building “green” pays even in the (relatively) short run [if time permits, my lament about payback expectations]
- We can be virtuous and SAVE big bucks

We learned these lessons in the late 'seventies;

why can we not relearn them? [“Trees cause more pollution than automobiles do.”
-- Ronald Reagan, 1981 and the Bushes have changed the GOP attitude toward the environment]

BUT, lies and confabulation eventually die—in the famous words of one Republican:
“You can fool some of the people all of the time, and all of the people some of the time, but you can not fool all of the people all of the time.”

—Abraham Lincoln (attributed, and plausible)

and, as interpreted by another Republican:
“You can fool some of the people all the time, and those are the ones you want to concentrate on.”

—George W. Bush (spoken at a Washington Dinner, March 2001)

I'd like to return to Abraham Lincoln for a quote that says a lot about him and a lot about the way we should do things:

“I shall try to correct errors when shown to be errors, and I shall adopt new views so fast as they shall appear to be true views.”

—Letter to Horace Greeley, Aug. 22, 1862.

Let's hope that some Lincolnian common sense will soon again thrive along the Potomac.