Obama's False Energy Vision
What, Why … and New Thinking Ahead

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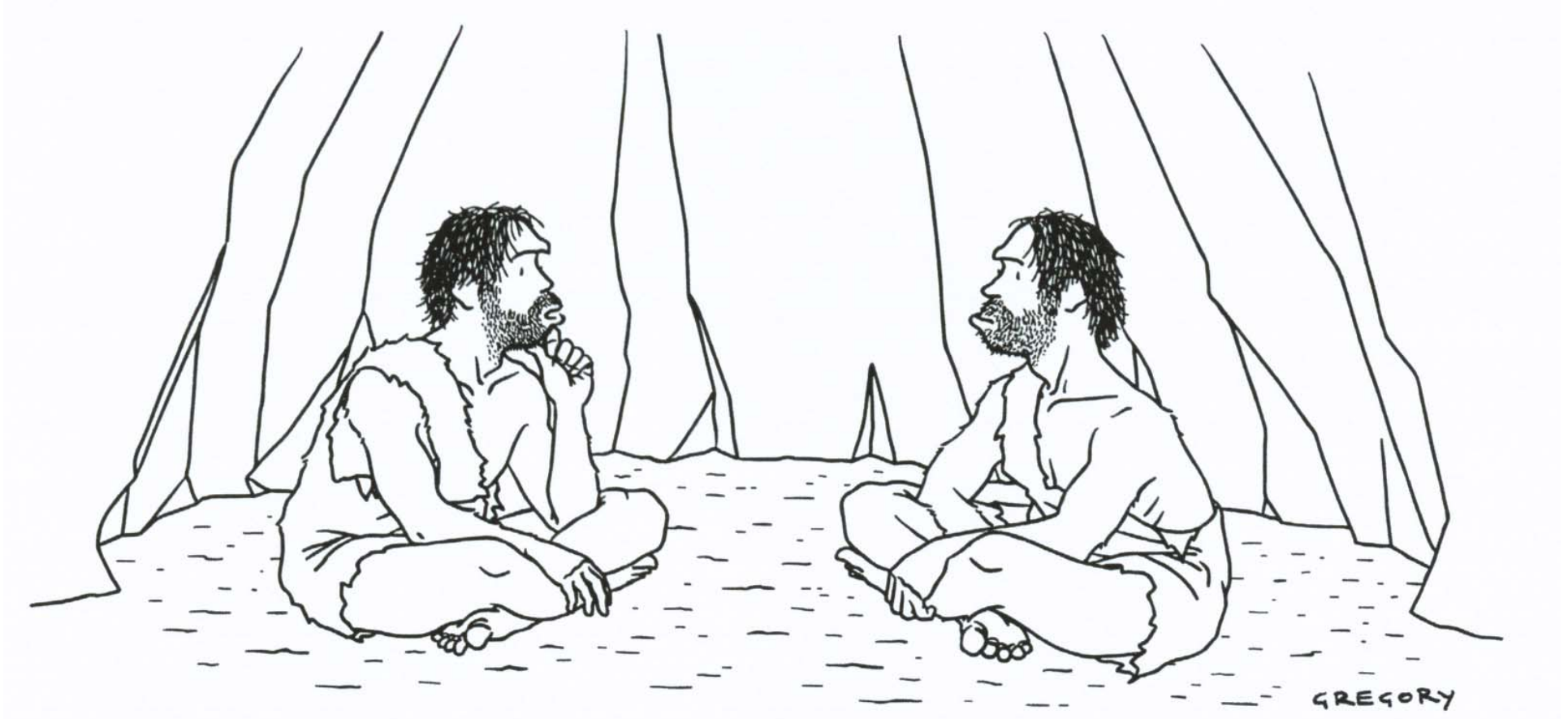
NEW MEXICO UTILITY
Shareholders Alliance

Robert L. Bradley, Jr.
Founder & CEO
Institute for Energy Research

Albuquerque, New Mexico
November 10, 2011

Four Energy Fundamentals

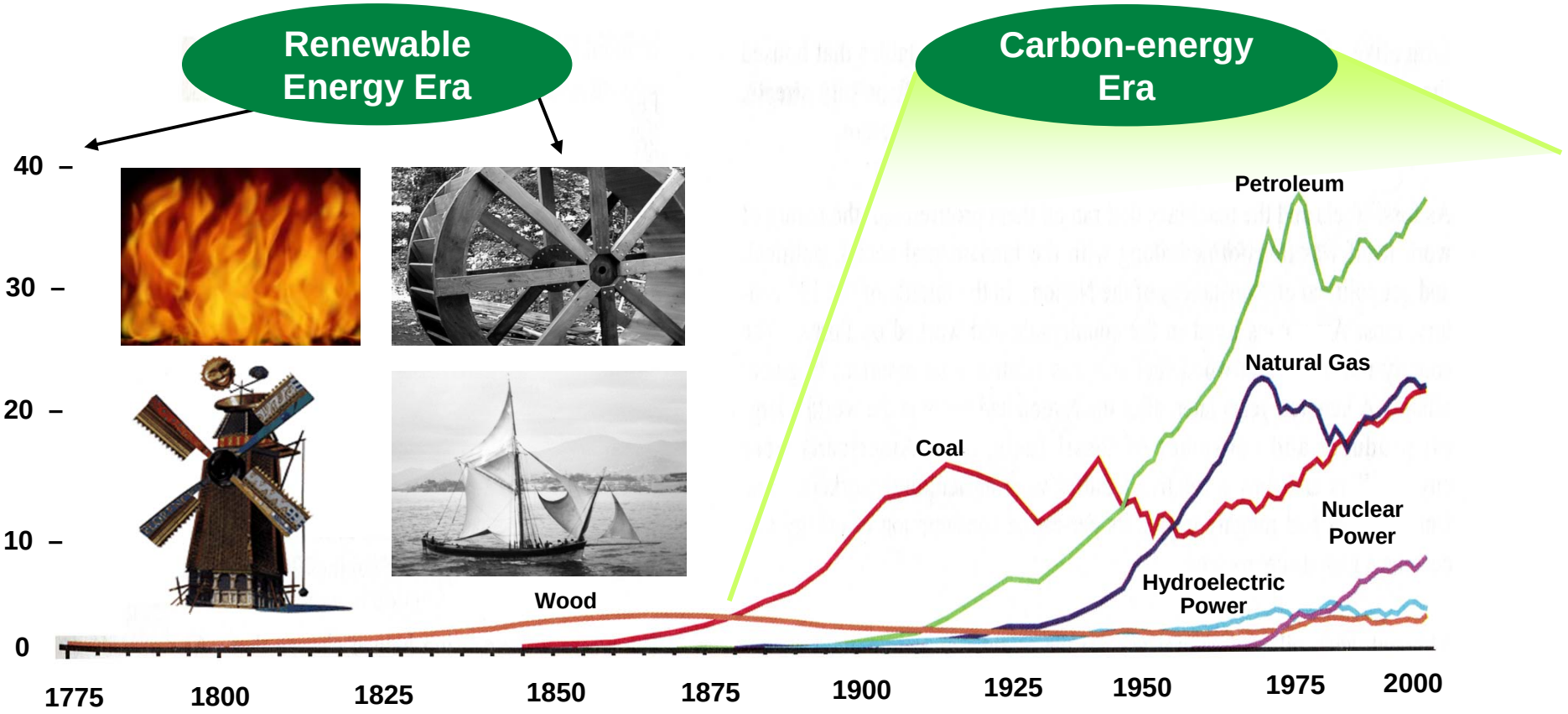
- **Energy is the resource of resources, the *Master Resource (dense* energy, that is)**
- **Energy is not a 'natural resource' but a man-made one ('resourceship')**
- **Free-market energy redounds for the general good; political energy is for elites**
- **The threat to energy sustainability is *statism*, not free-market processes or outcomes**

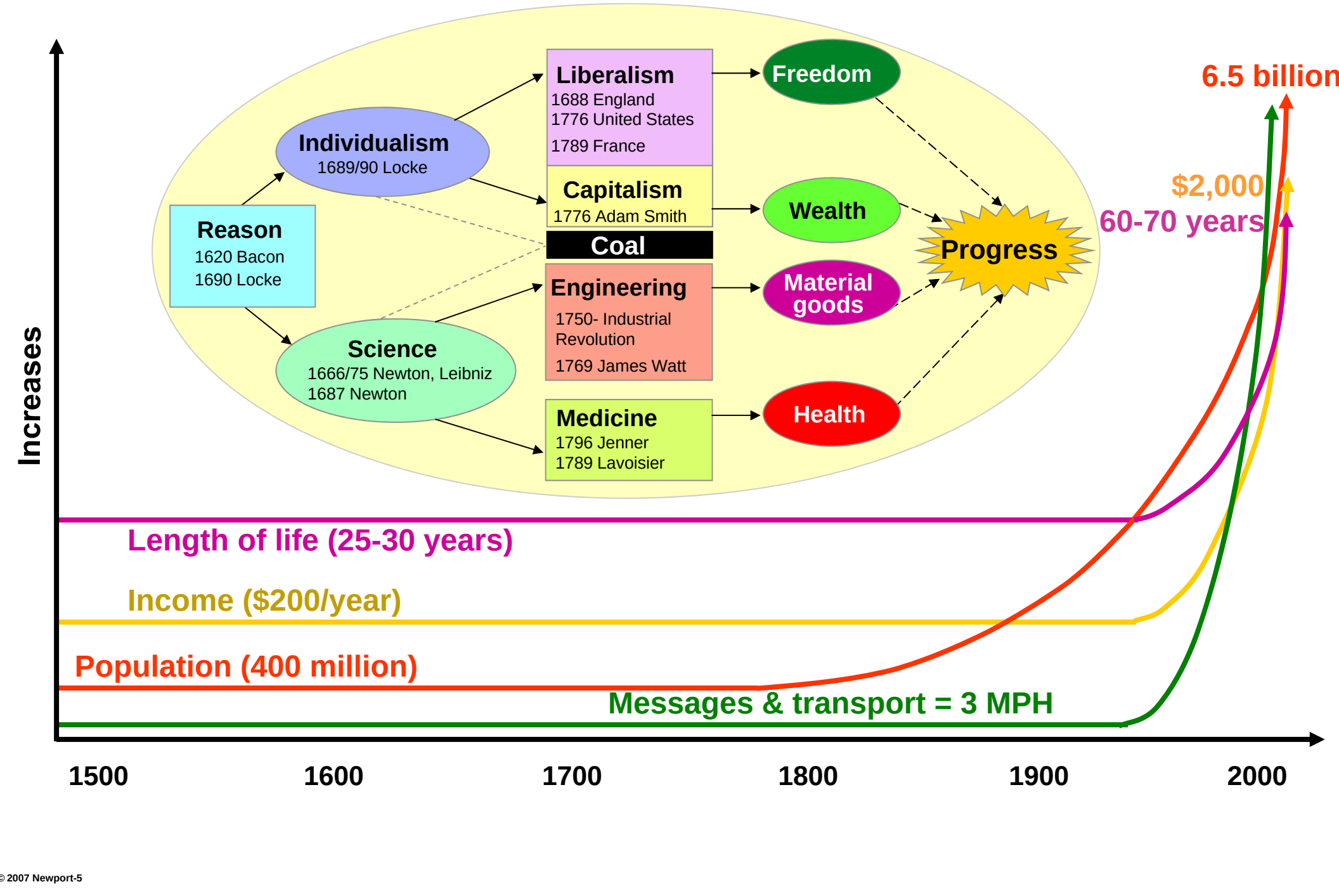


"Something's just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty."

our energy is renewable

Renewable to Carbon-energy Era: U.S.
(Quads)





From W. S. Jevons to Robert Bryce
Energy Density & Reliability Are Key

THE

COAL QUESTION;

AN INQUIRY

CONCERNING THE PROGRESS OF THE NATION,

AND THE

PROBABLE EXHAUSTION OF OUR COAL-MINES

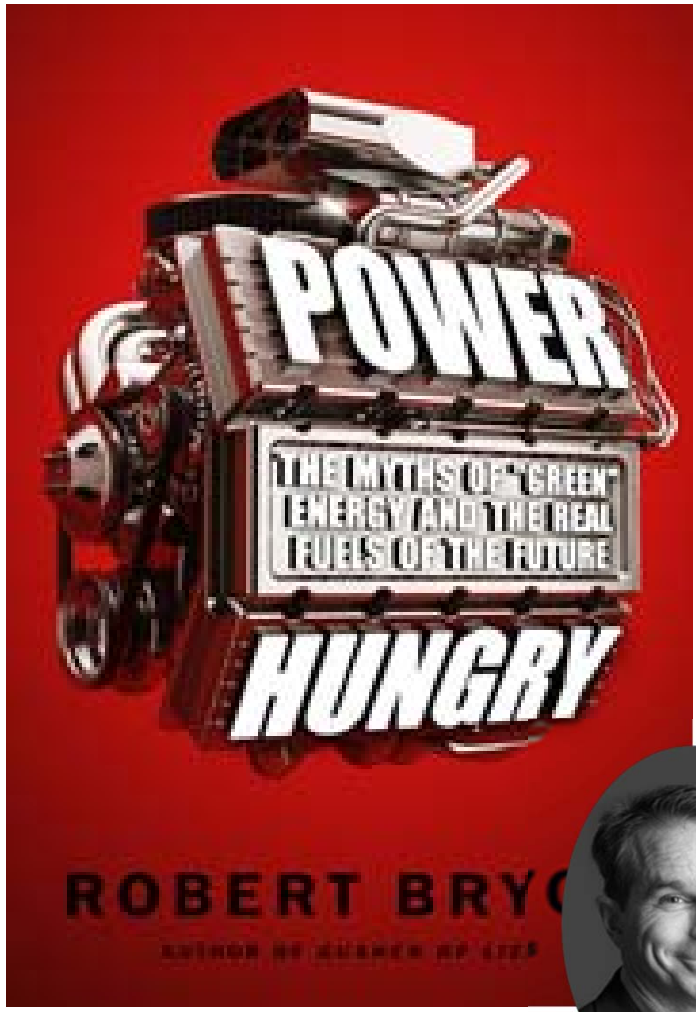
BY

W. STANLEY JEVONS, M.A.

London and Cambridge:

MACMILLAN AND CO.

1865.



W. S. Jevons
"The Coal Question" (1865)

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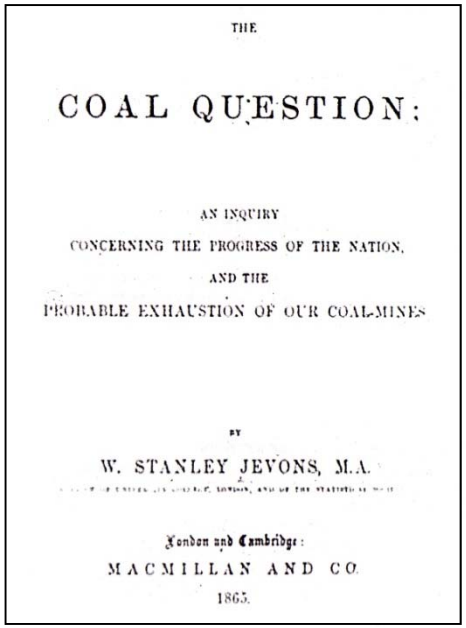
Limits of Windpower

(1865)



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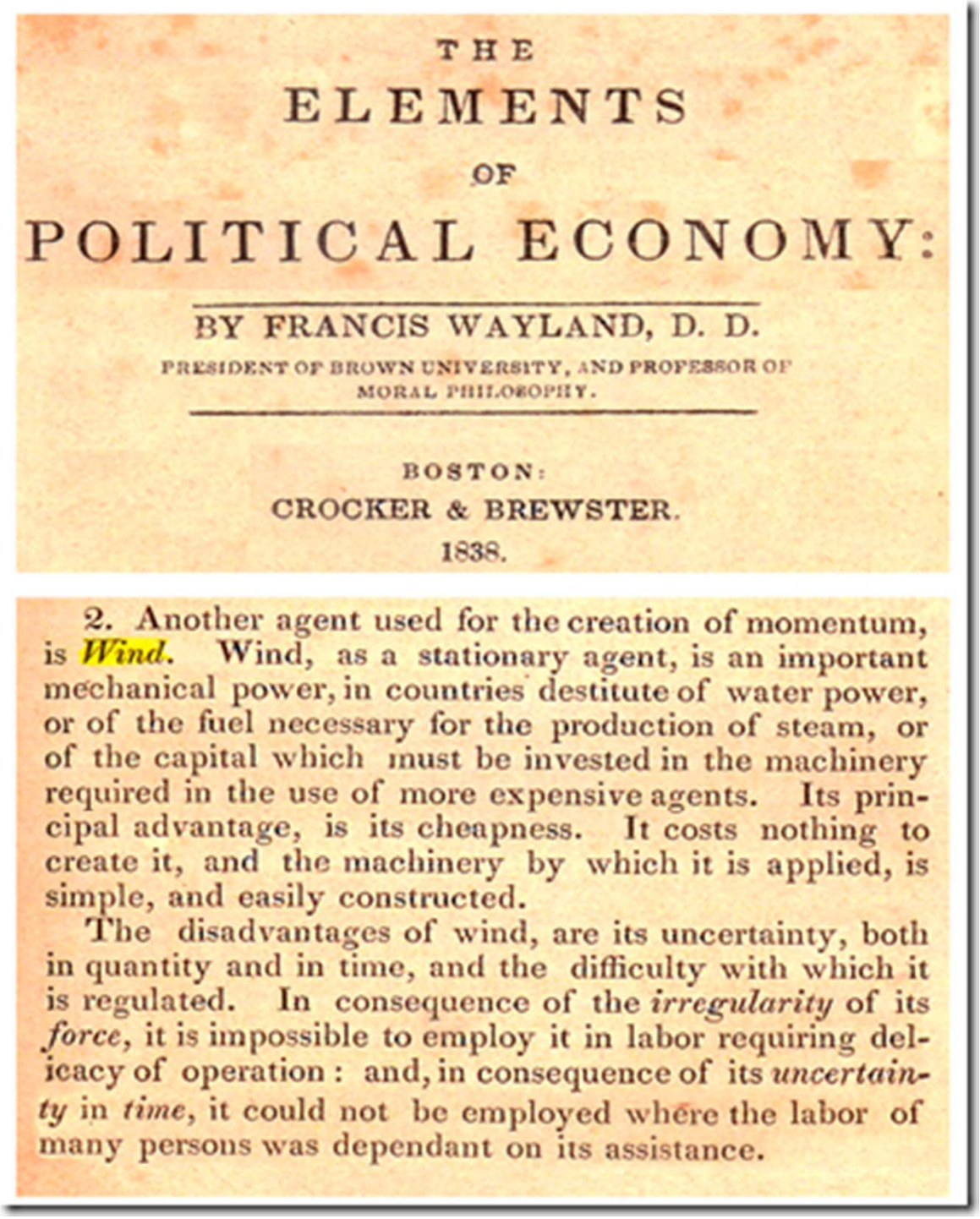
"The first great requisite of motive power is, *that it shall be wholly at our command, to be exerted when, and where, and in what degree we desire*. The wind, for instance, as a direct motive power, is wholly inapplicable to a system of machine labour, for during a calm season the whole business of the country would be thrown out of gear."

"No possible concentration of windmills … would supply the force required in large factories or iron works. An ordinary windmill has the power of about thirty-four men, or at most seven horses. Many ordinary factories would therefore require ten windmills to drive them, and the great Dowlais Ironworks, employing a total engine power of 7,308 horses, would require no less than 1,000 large windmills!"

“ … *irregularity of its force* …”

“ …*uncertainty in time* …”



THE

ELEMENTS

OF

POLITICAL ECONOMY:

BY FRANCIS WAYLAND, D. D.

PRESIDENT OF BROWN UNIVERSITY, AND PROFESSOR OF MORAL PHILOSOPHY.

BOSTON:

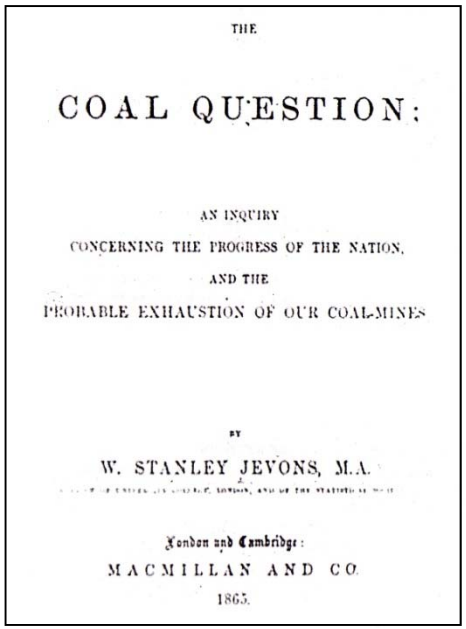
CROCKER & BREWSTER.

1838.

2. Another agent used for the creation of momentum, is *Wind*. Wind, as a stationary agent, is an important mechanical power, in countries destitute of water power, or of the fuel necessary for the production of steam, or of the capital which must be invested in the machinery required in the use of more expensive agents. Its principal advantage, is its cheapness. It costs nothing to create it, and the machinery by which it is applied, is simple, and easily constructed.

The disadvantages of wind, are its uncertainty, both in quantity and in time, and the difficulty with which it is regulated. In consequence of the *irregularity* of its *force*, it is impossible to employ it in labor requiring delicacy of operation: and, in consequence of its *uncertainty* in *time*, it could not be employed where the labor of many persons was dependant on its assistance.

(1865)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Limits to Hydropower

"When an abundant natural fall of water is at hand, nothing can be cheaper or better than water power. But everything depends upon local circumstances. The occasional mountain torrent is simply destructive. Many streams and rivers only contain sufficient water half the year round and costly reservoirs alone could keep up the summer supply. In flat countries no engineering art could procure any considerable supply of natural water power, and in very few places do we find water power free from occasional failure by drought."

Limits to Biomass

"We cannot revert to timber fuel, for 'nearly the entire surface of our island would be required to grow timber sufficient for the consumption of the iron manufacture alone.'"

Limits to Geothermal

"The internal heat of the earth … presents an immense store of force, but, being manifested only in the hot-spring, the volcano, or the warm mine, it is evidently not available."

Wind Hyperbole vs. Reality

“Although wind farms still depend on tax credits, they are likely to be economical without this support within a few years.”

- Worldwatch Institute, 1985

“Solar and wind energy technologies appear to be entering a ‘takeoff’ phase of the kind that personal computers experienced in the early 1980’s.”

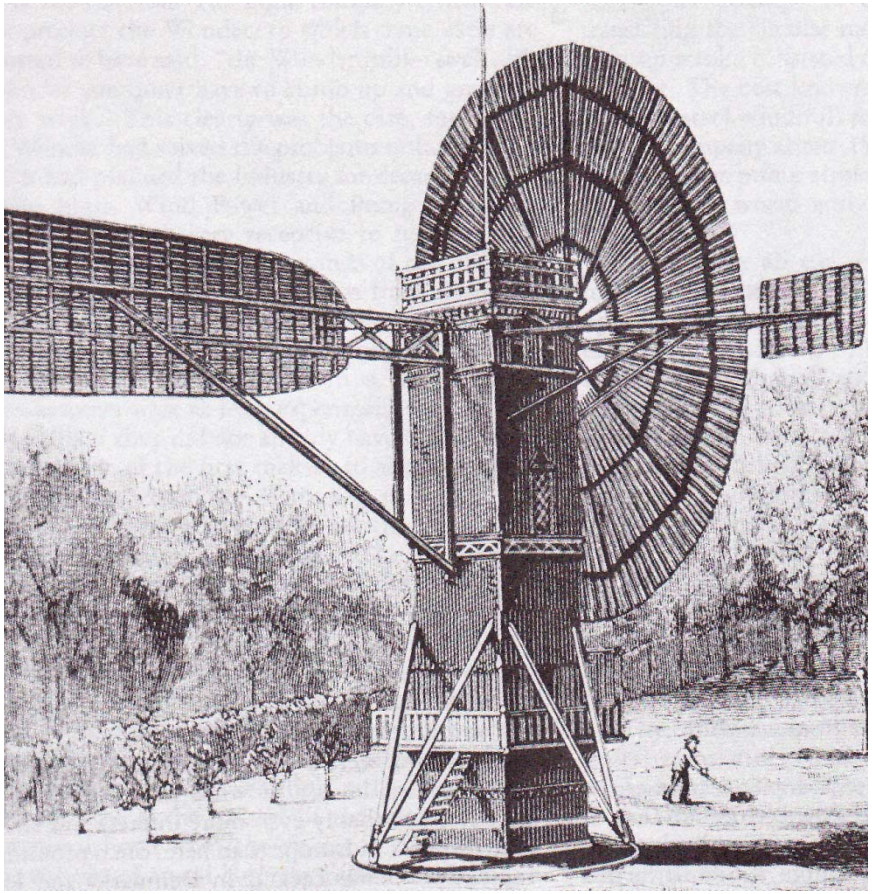
- Worldwatch Institute, 1996

“Advances in wind turbine systems [are making wind]. . . cost-competitive with fossil-fuel powered generation in some regions.”

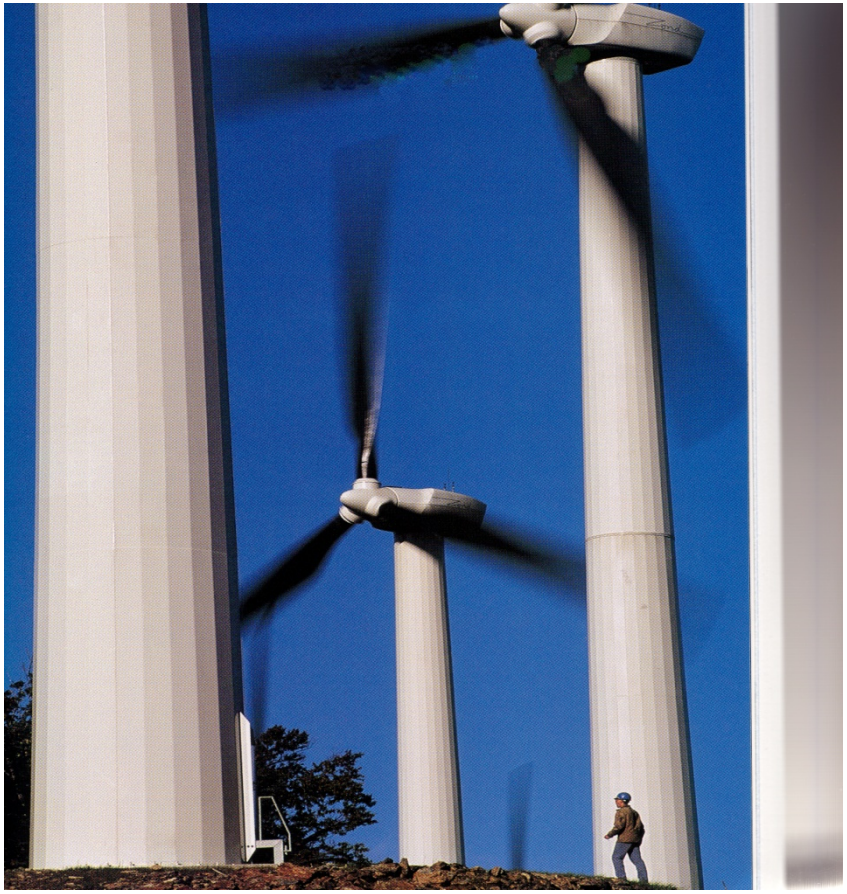
- Worldwatch Institute, 2001

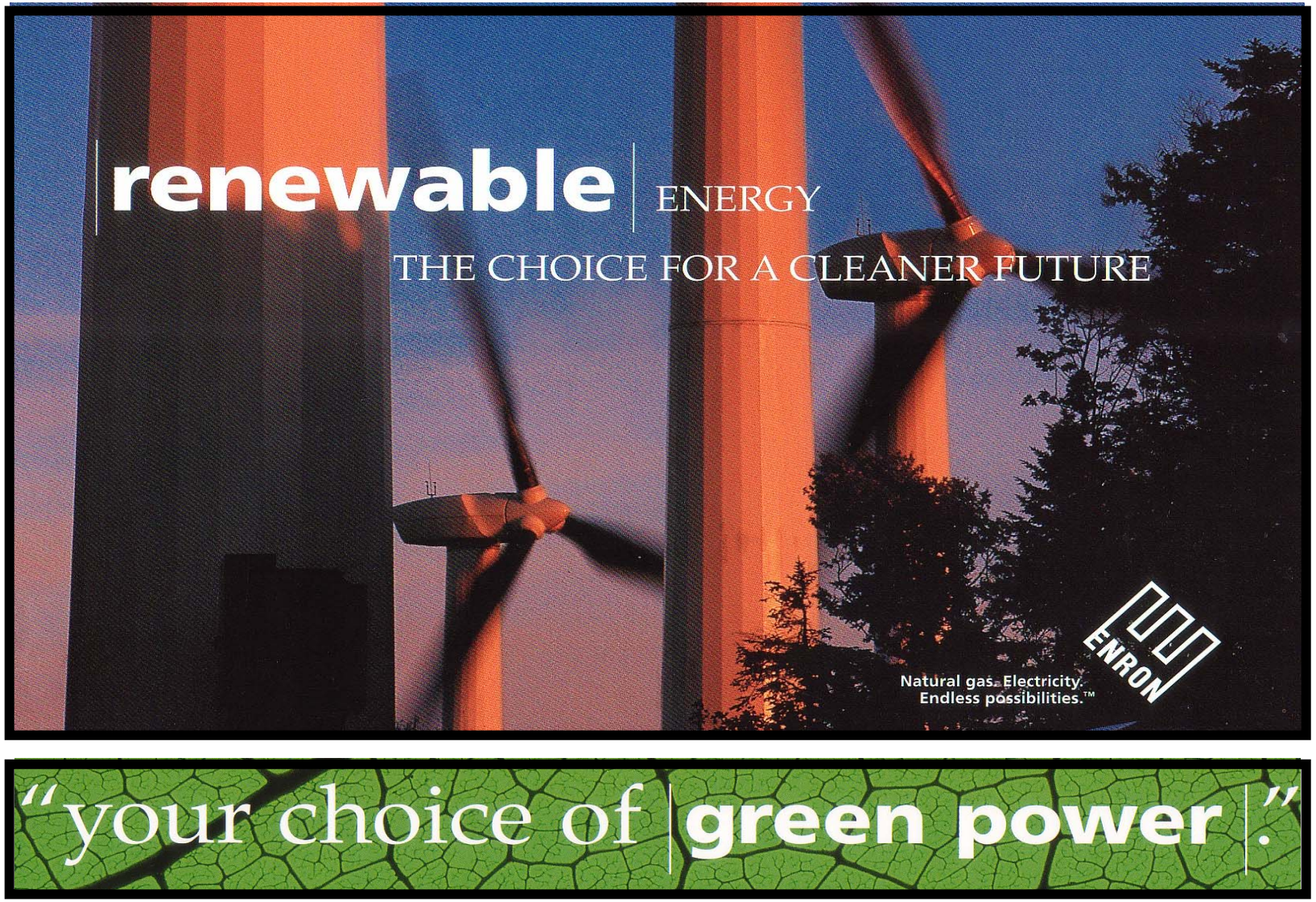
Wind Power: Energy Future or Past?

Late 19th Century



Late 20th Century





"Enron's mini-vision: Become the world's leading renewable energy company"

Solar Hyperbole vs. Reality

“The solar market could explode.”

-Royal Dutch Shell, 1980

“Many of the machines and processes that could provide energy in a solar economy are now almost economically competitive with fossil fuels.”

-Worldwatch Institute, 1990

Enron 1994

5.5¢/KWH

Business Day NOVEMBER 15, 1994

The New York Times

Solar Power, for Earthly Prices

Enron Plans to Make The Sun Affordable

By ALLEN R. MYERSON

Special to The New York Times

DALLAS, Nov. 14 — The nation's largest natural gas company is betting $150 million that it can succeed where the Government has so far failed: producing solar power at rates competitive with those of energy generated from oil, gas and coal.

The Enron Corporation plans to build a plant in the southern Nevada desert that would be the largest operation in the country making electricity directly from sunlight, producing enough to power a city of 100,000 people. It is expected to begin operating in late 1996.

Grand promises in the late 1970's about the potential of virtually pollution-free, endlessly renewable energy sources like solar energy faded into an embarrassed hush. But several of the nation's leading solar power experts say Enron's optimistic goal is probably reachable.

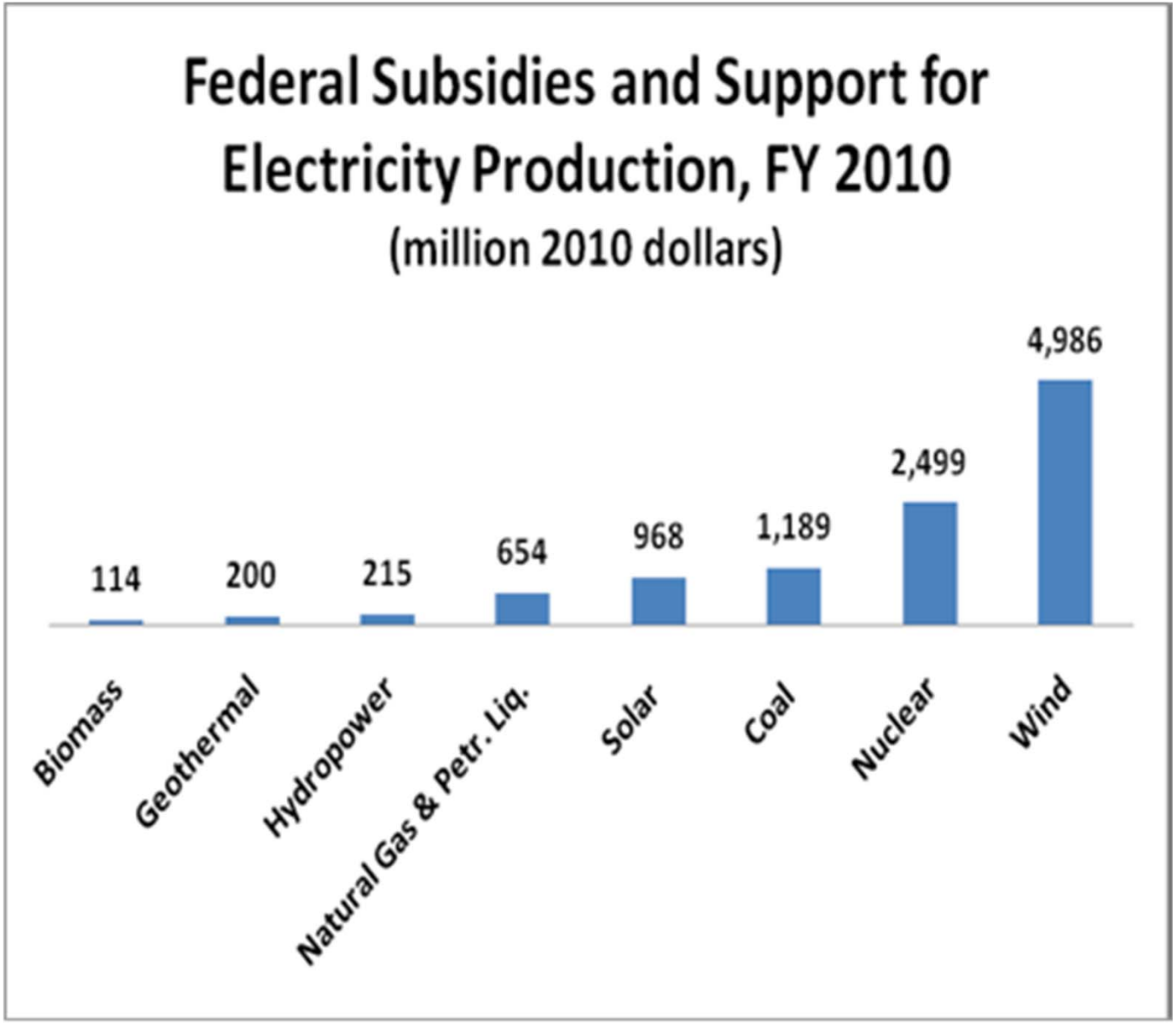
The reason is that during the last decade, the cost of solar power generation has quietly declined by two-thirds. Far from depending on some wondrous breakthrough, the experts say, Enron can offer commercially competitive solar power by inexpensively mass-producing solar panels, and then employing thousands of them in the Nevada desert.

Even the most optimistic supporters of solar power have doubted that they would see commercially competitive production until the next century. The Worldwatch Institute, an environmental group in Washing-

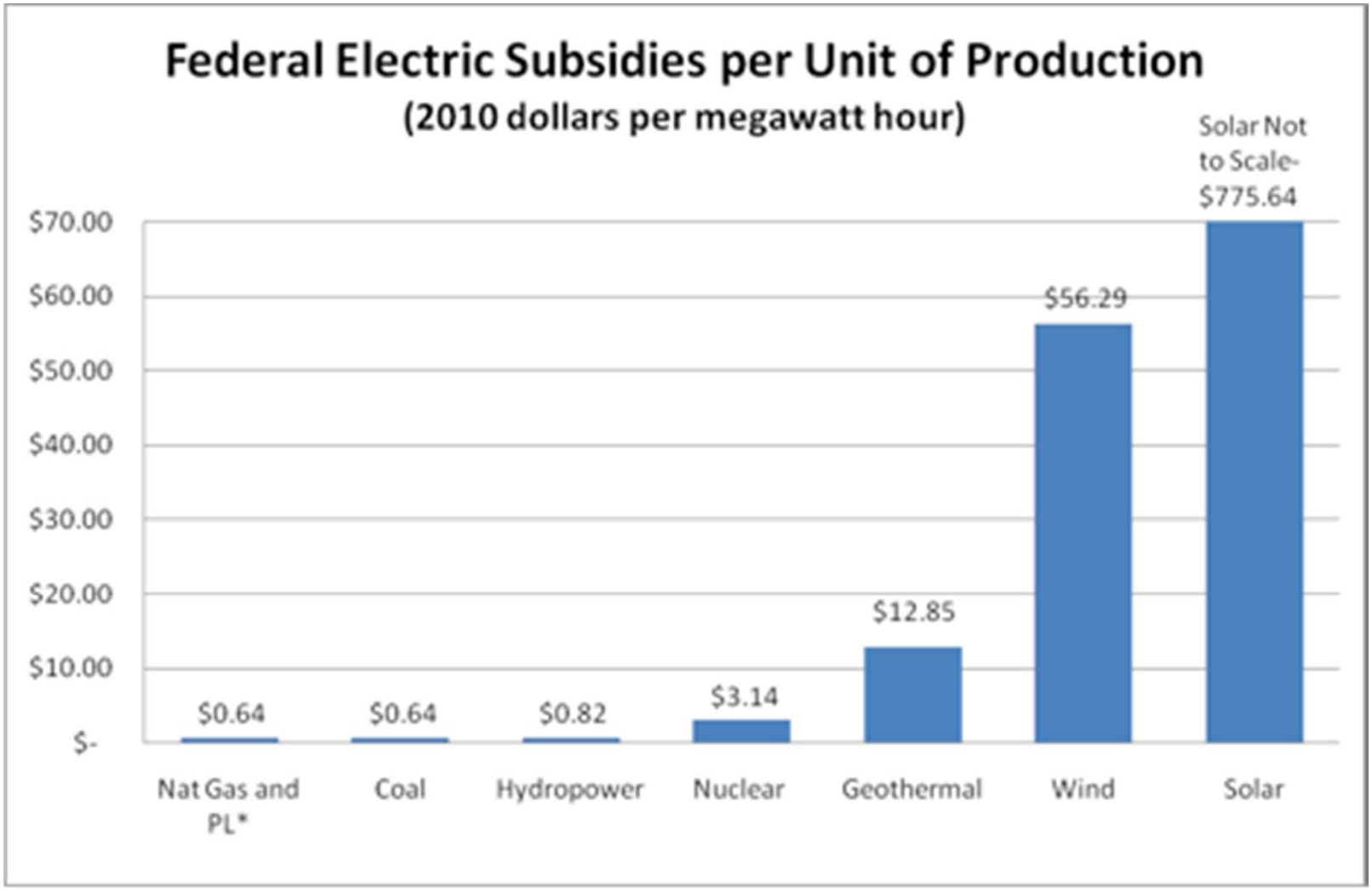
F. Carter Smith for The New York Times

The Enron Corporation will use photovoltaic panels of shimmering metallic greens, blues and violets to harness the sun's power at the company's new solar energy power plant in Nevada. Robert C. Kelly,

Solyndra 2011



U.S. Energy Information Administration (2011)



U.S. Energy Information Administration, 2011

Solar Power Seen Meeting 20% of Needs By 2000; Carter May Seek Outlay Boost

By WALTER S. MOSSBERG
Staff Reporter of THE WALL STREET JOURNAL

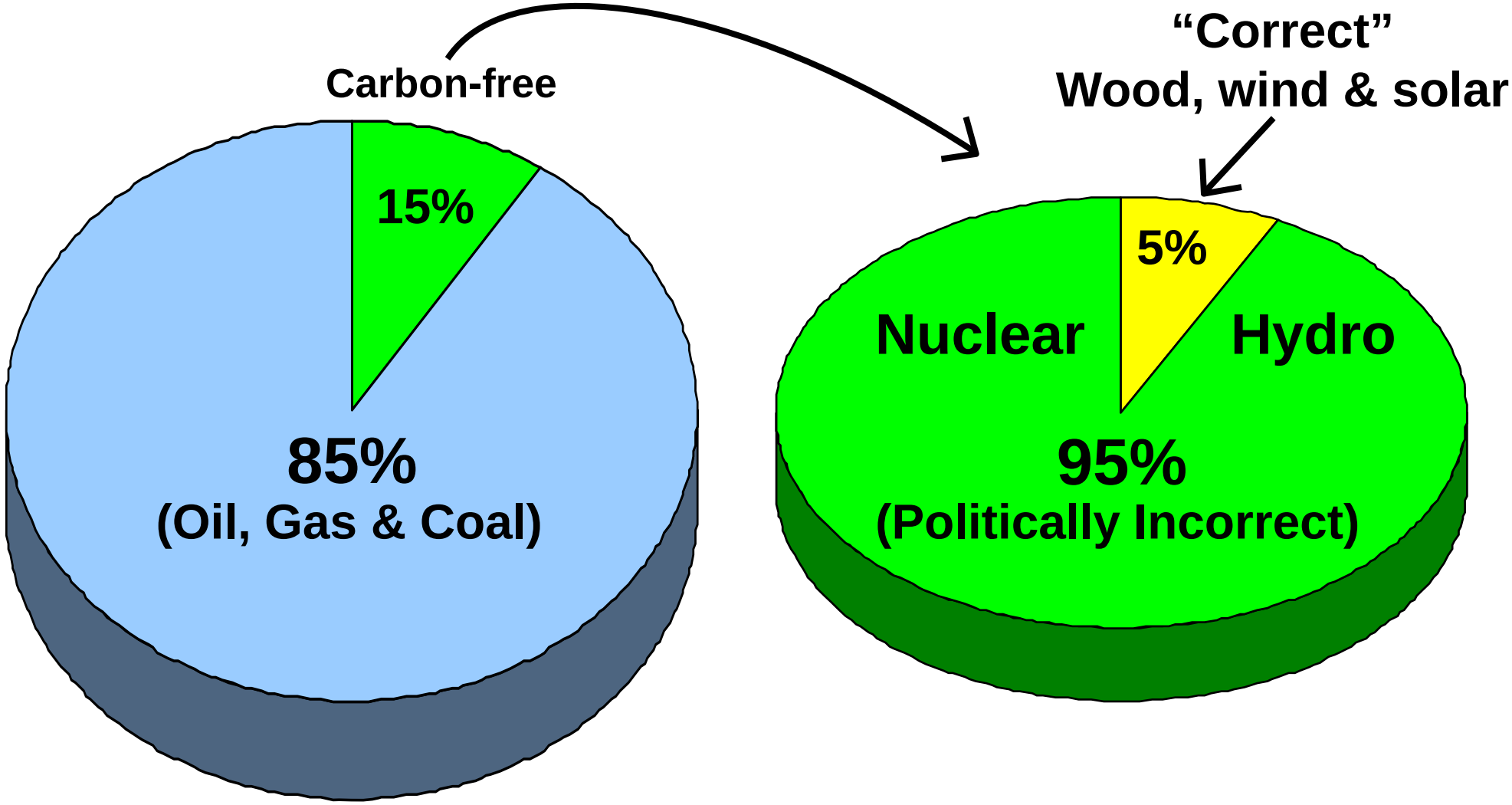
WASHINGTON—Federal planners have concluded that solar energy can contribute as much as 20% of U.S. energy needs by the that a second, smaller review group be named to tailor policy options to a specific goal, preferably the environmental council's projection of a 25% solar share of U.S. energy by 2000.

Renewable Fuels May Provide 25% of U.S. Energy by 2025

By JOHN J. FIALKA

WASHINGTON—A new Rand Corp. study showing the falling costs of ethanol, wind power and other forms of renewable energy predicts such sources could furnish as much as 25% of the of the nation's energy, and about half of that comes from hydroelectric dams. The study assumes renewable-energy costs will keep dropping at the rate of recent years. It says raising the use of renewables to 25% of all U.S. energy consumed would reduce U.S. reliance on oil by

Carbon-free Energies in the U.S.
What is Politically Correct?



Source: U.S. DOE

Anti-energy, Period

“If you ask me, it’d be little short of disastrous for us to discover a source of clean, cheap, abundant energy because of what we might do with it.”

- Amory Lovins (1977)

“In fact, giving society cheap, abundant energy at this point would be the equivalent of giving an idiot child a machine gun.”

- Paul Ehrlich (1978)

“Our [dysfunctional] civilization is, in effect, addicted to the consumption of the earth itself…. The froth and frenzy of industrial civilization mask our deep loneliness for that communion with the world that can lift our spirits and fill our senses with the richness and immediacy of life itself.”

- Al Gore (1992)

Obama's "Dream 'Green' Team"

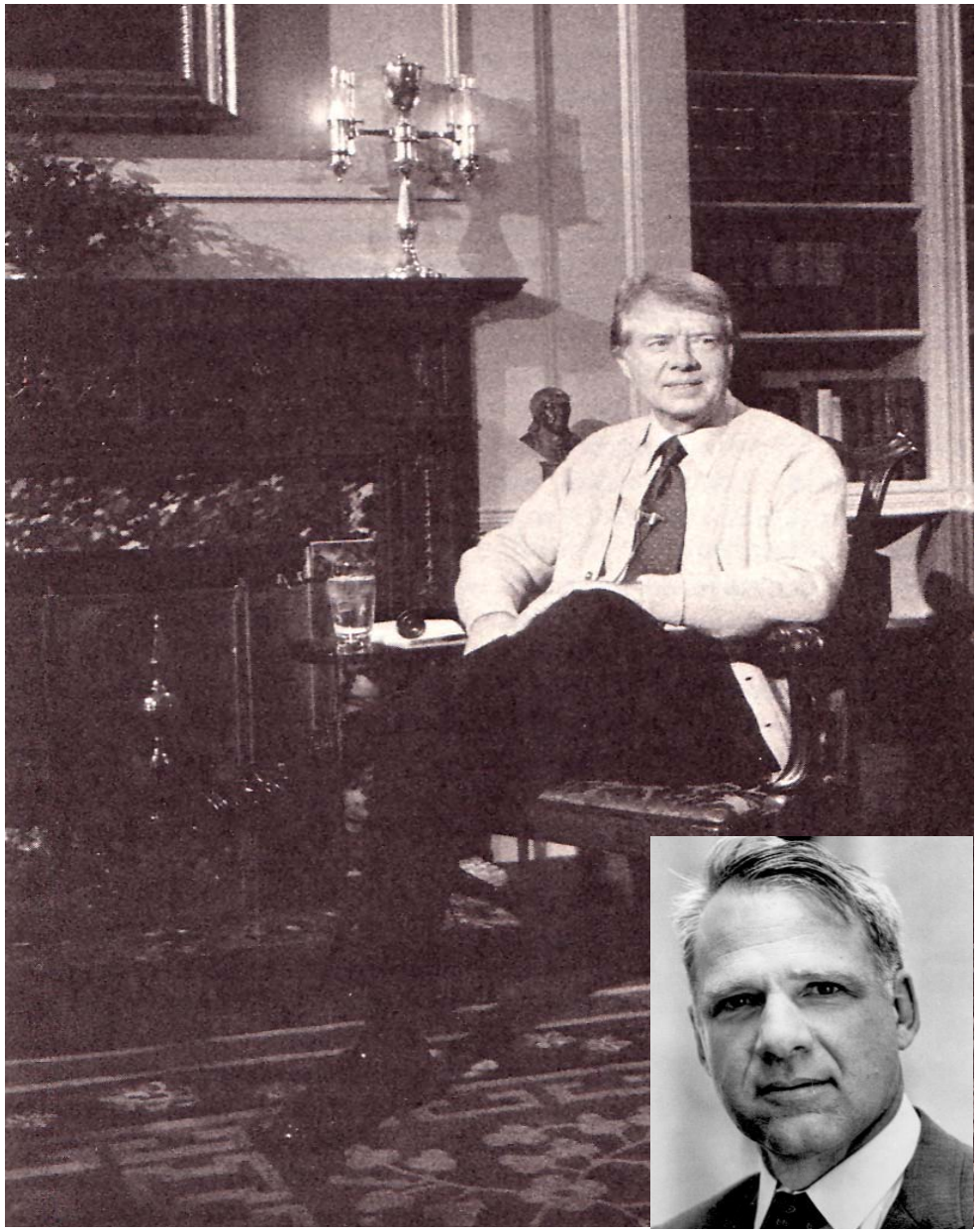
Carol Browner
(Fmr.) Director, White House Office of Energy and Climate Policy

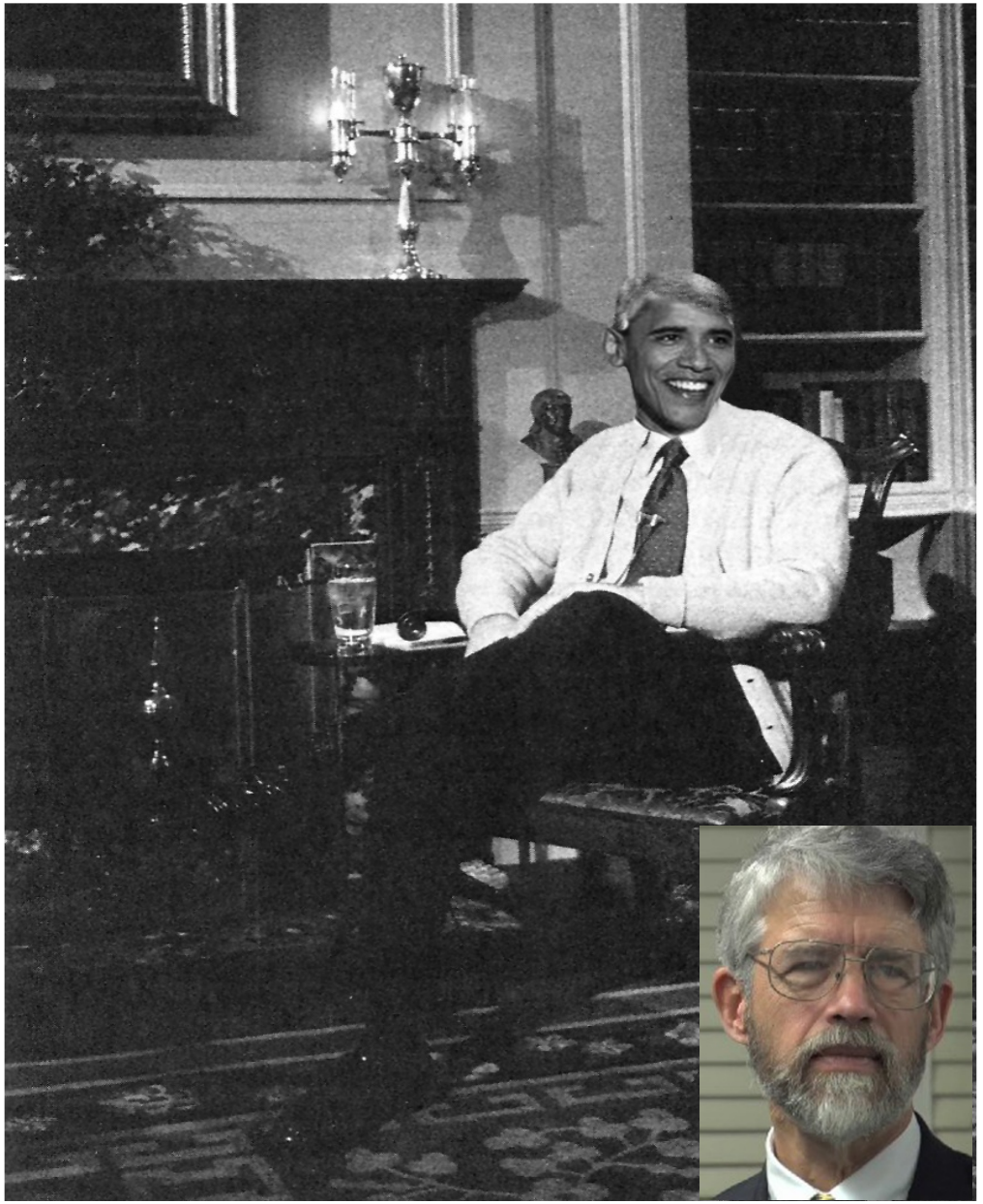
Lisa Jackson
Administrator, U.S. EPA

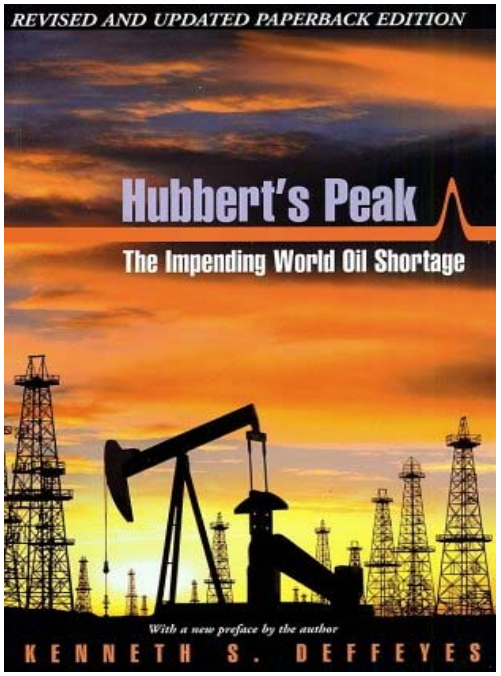
John Holdren
White House Science Advisor

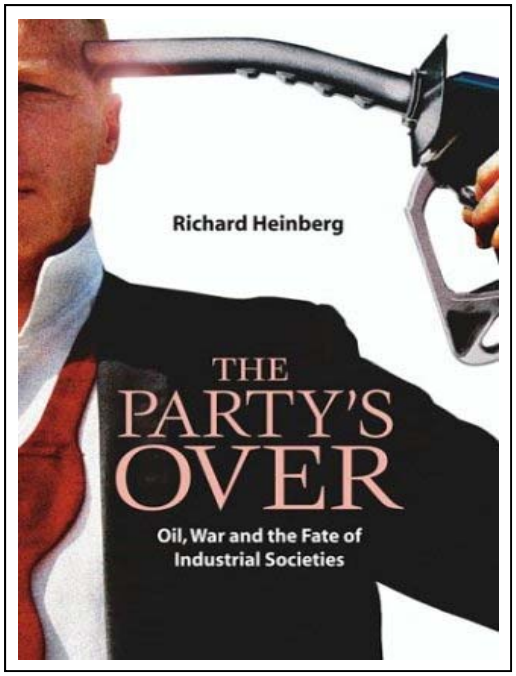
Steven Chu
Secretary, U.S. DOE

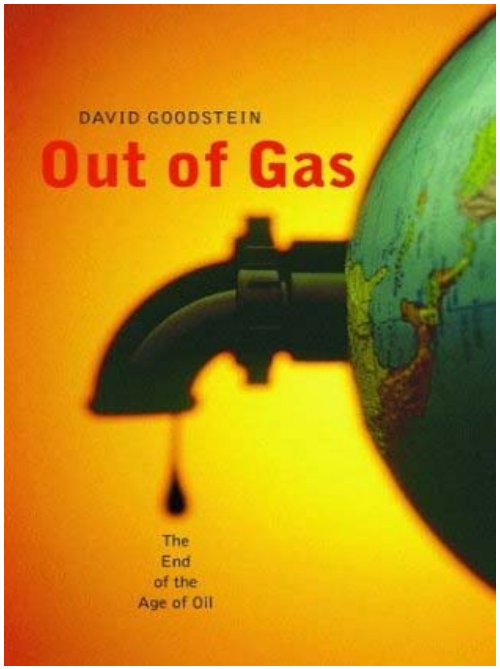
Ken Salazar
Secretary, U.S. Dep't of Interior

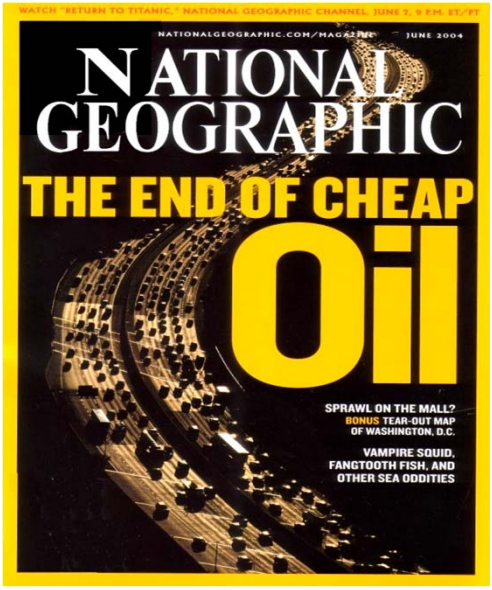




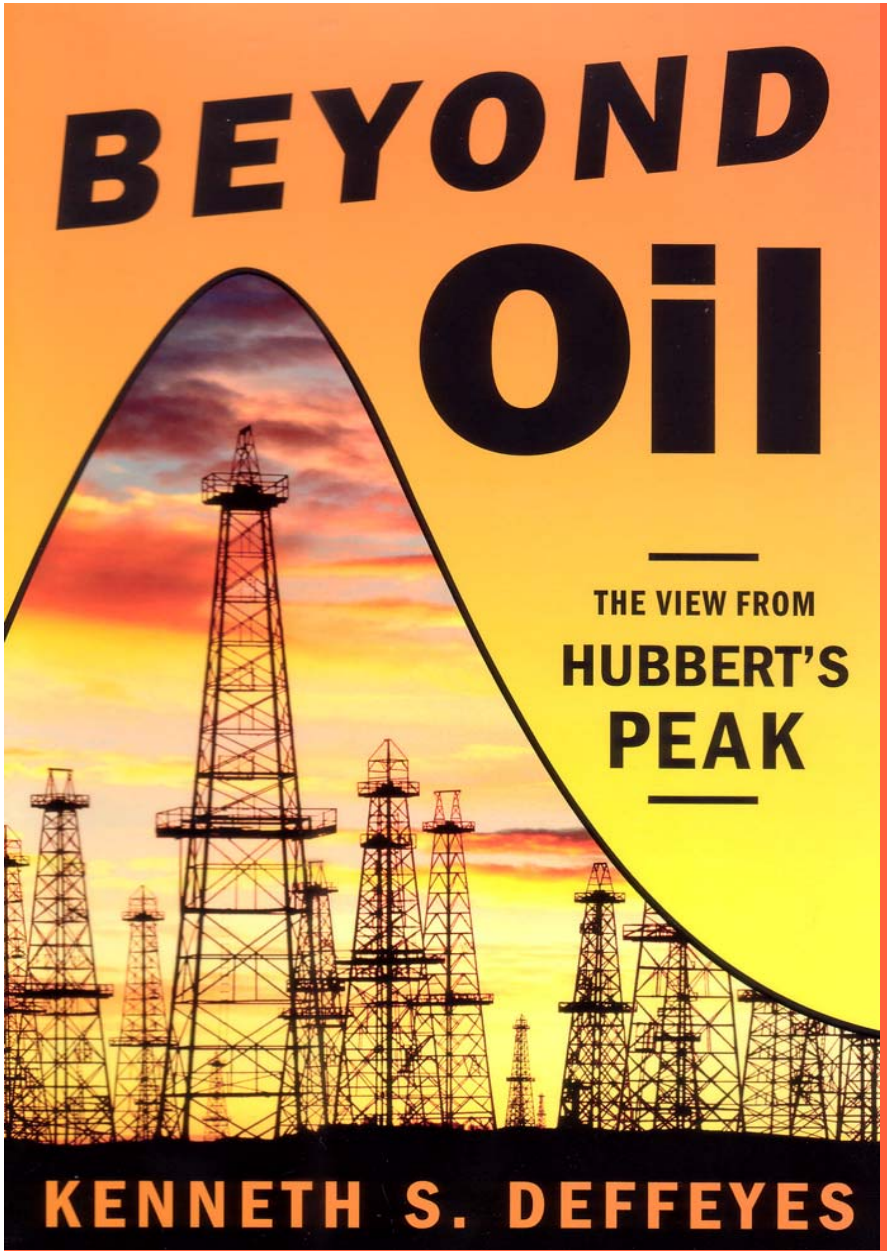








Alarmism… Central Energy Planning



"It looks as if the Hubbert peak is upon us. Whether the maximum year is 2003 and 2005 doesn't matter much. It's real and it's here. Business as usual is not an option."

"Whether we like it or not, there will be major rearrangements in the world economy. It would be more orderly if we were to generate a blueprint for a society constrained by the availability of resources. Then we need a noncatastrophic pathway that takes us from here to that blueprint."

Fixity = Depletion

Julian Simon (1932-1998)

- Originally a pessimist (a ‘Malthusian’)
- Overpopulation = ‘Bleak House’
- Empiricist: looking for correlations
- Changed his mind!

More People (in market settings) result in…

Greater Wealth … Expanded Resources … Cleaner Environment

- Natural resources and energy are getting less scarce.
- Pollution in the U.S. has been decreasing.
- The world's food supply is improving.
- Population growth has long-term benefits. . . . .

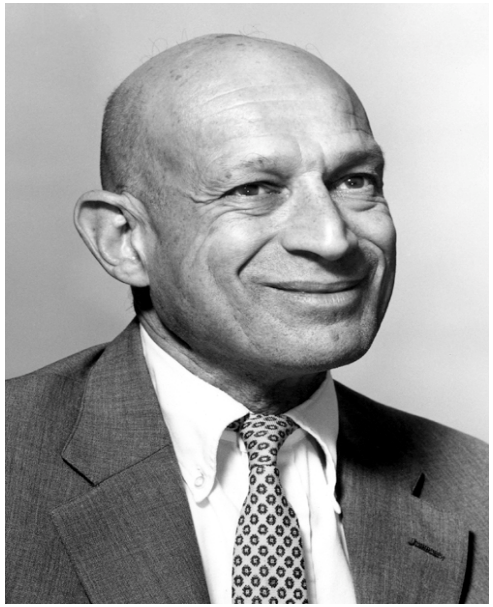
THE ULTIMATE RESOURCE

BY JULIAN L. SIMON

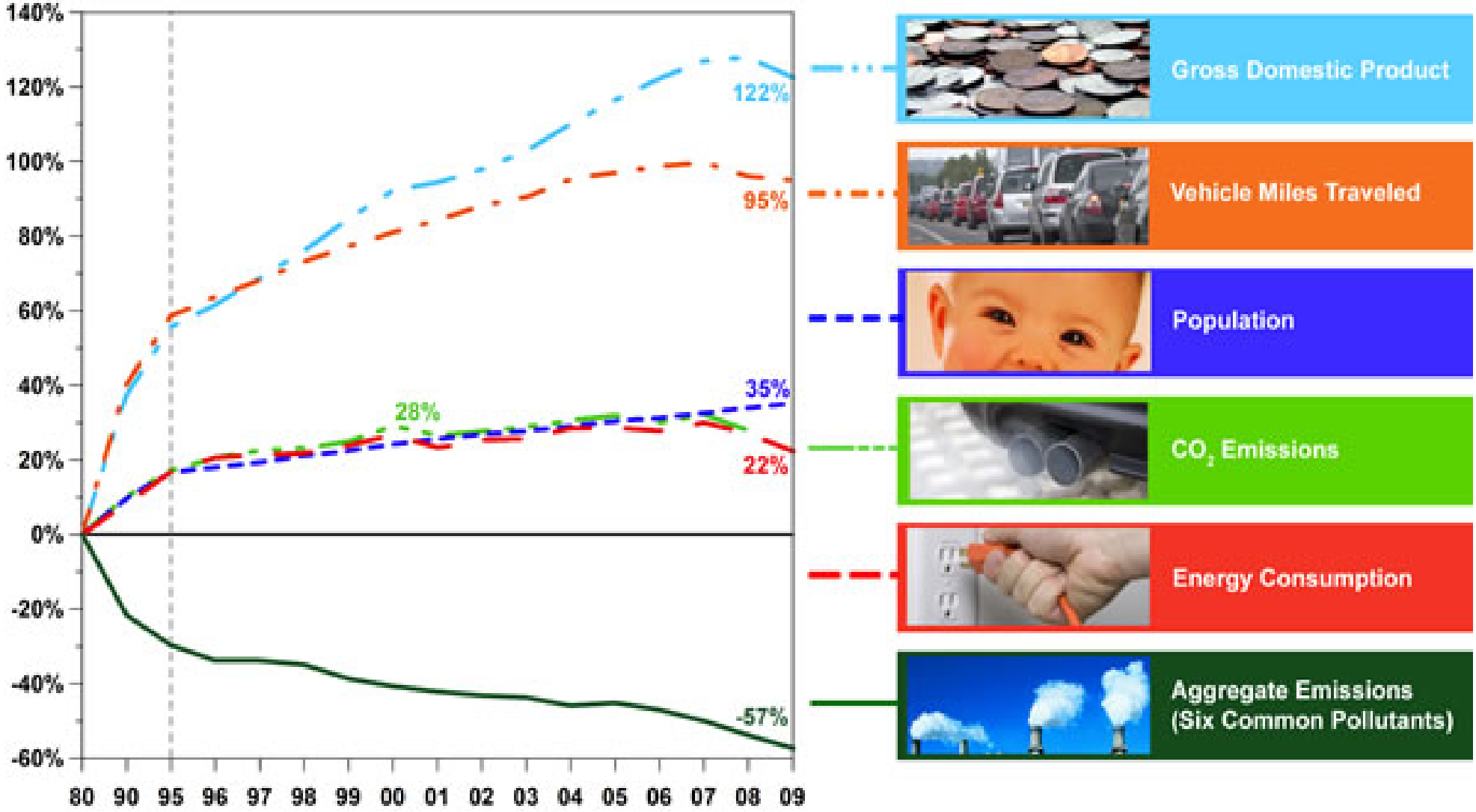
More People

in market settings result in

Greater Wealth
Expanded Resources
Cleaner Environment



Comparison of Growth Areas and Emissions, 1980-2009



Source: EPA, http://www.epa.gov/airtrends/aqtrends.html#comparison

Energy Expansionism

Erich Zimmermann

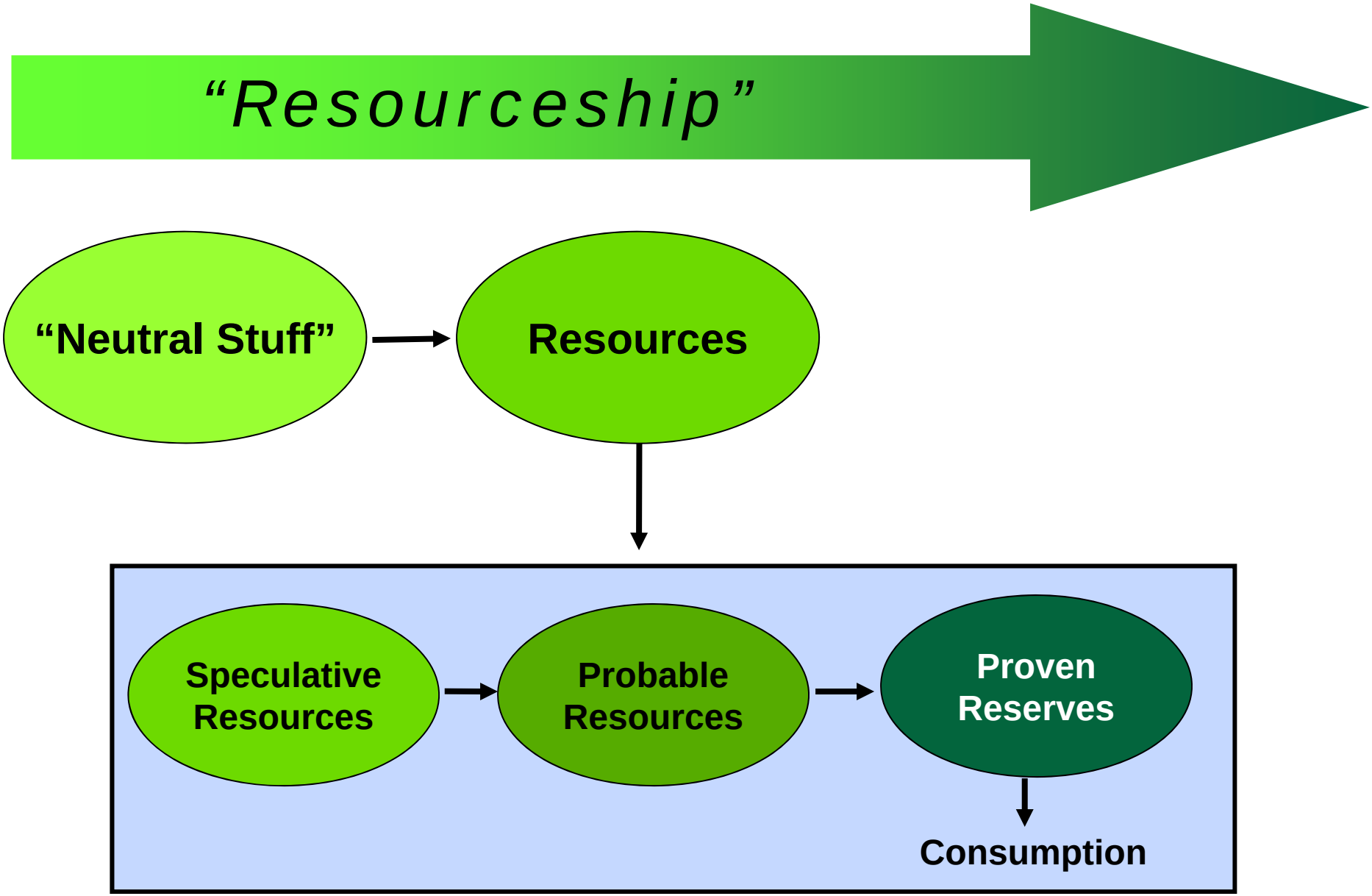
Julian Simon

Knowledge

Financial Capital

Energy Richer

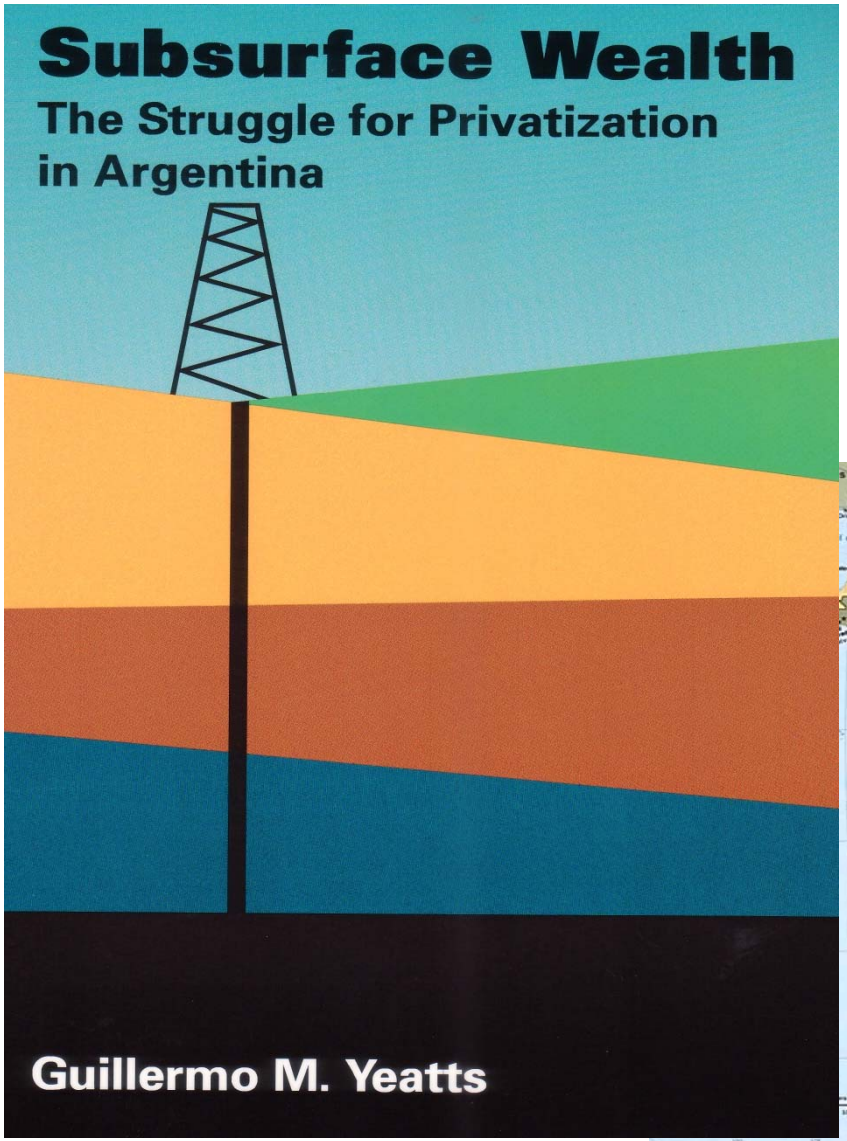
Substitutes

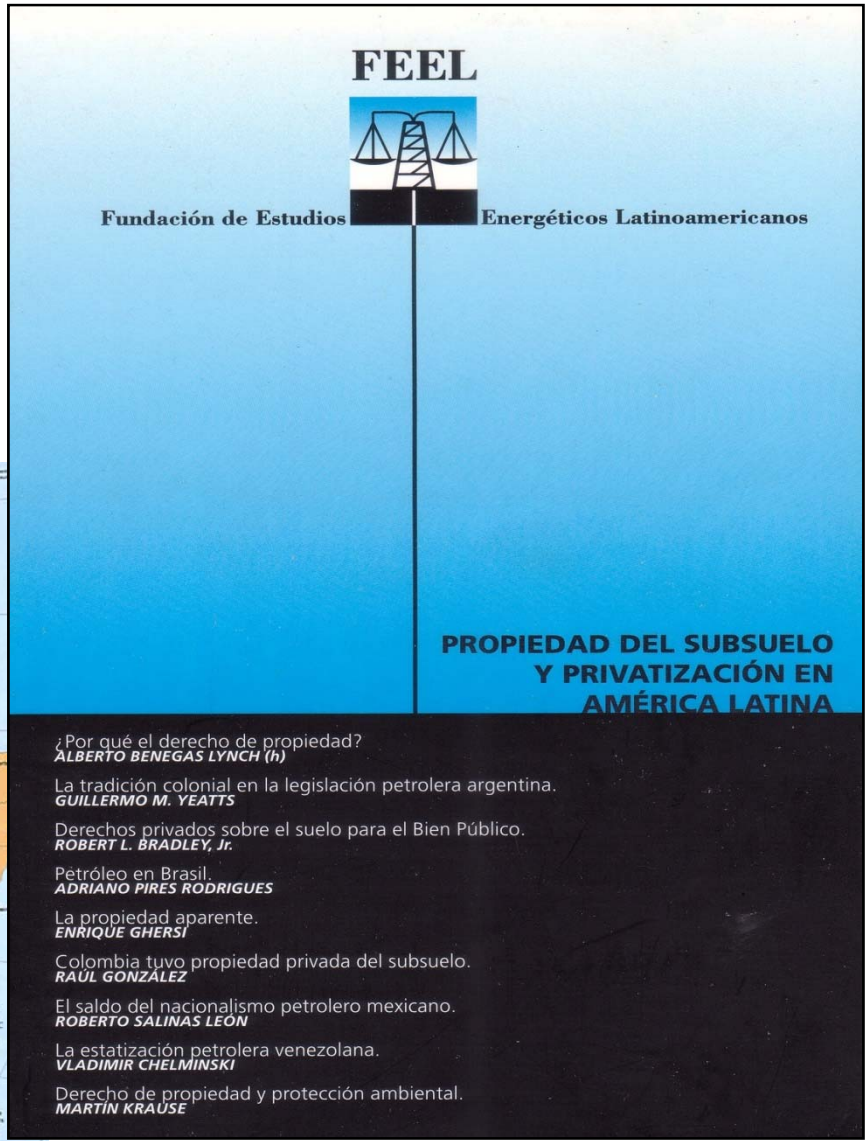


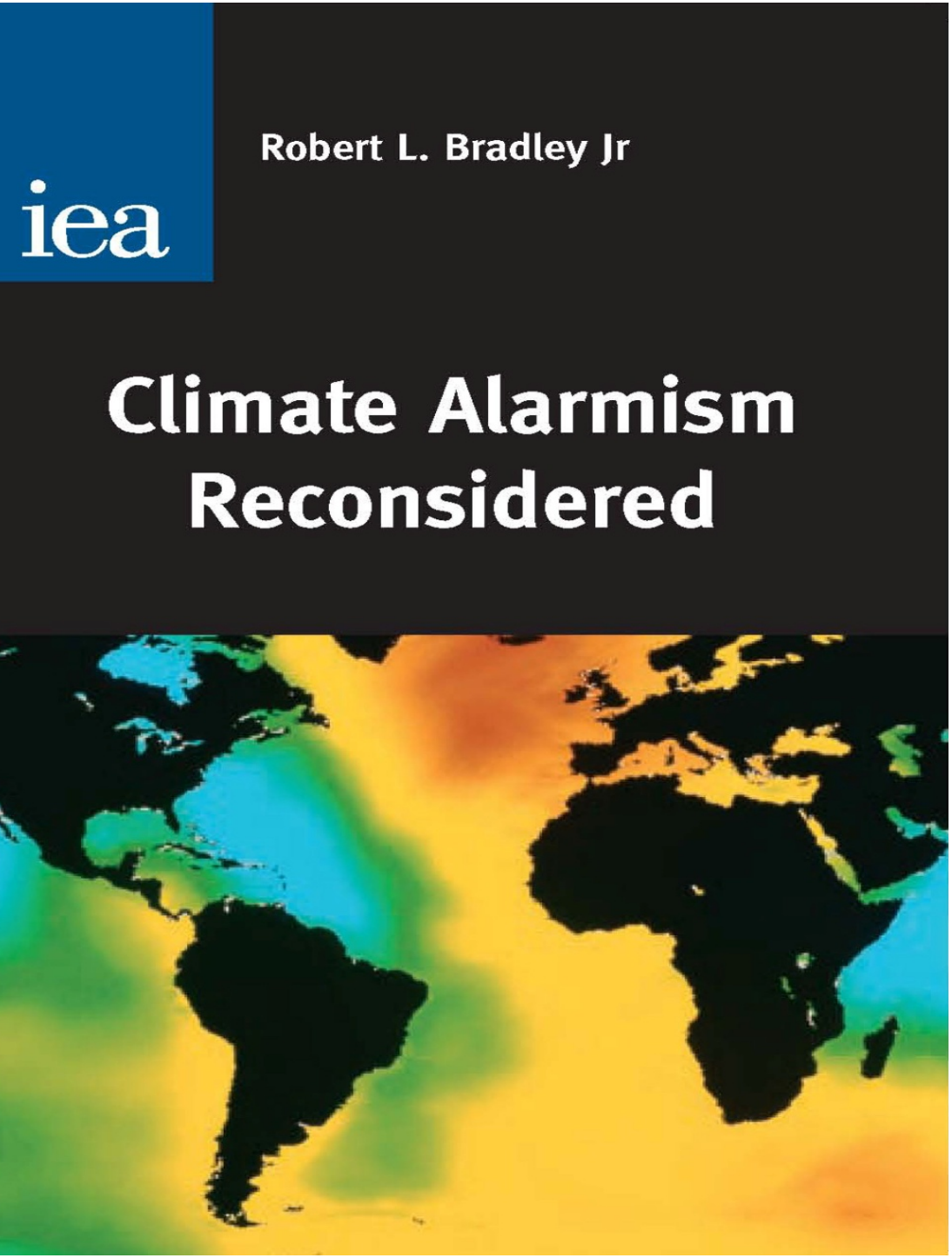
Fallacy of Fixity

There is no Glass!

Subsoil Privatization: An Energy Imperative







CO_2 Benefits

- Fertilization effect
- Moderately warmer
- Moderately wetter
- Reduced diurnal cycle
- Greater wealth

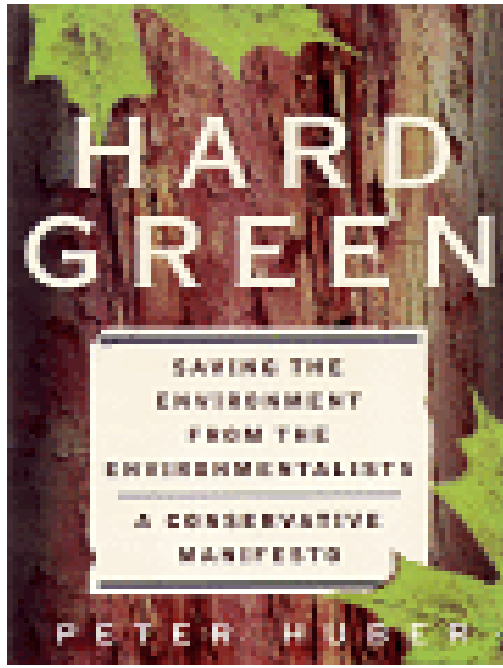
Curse or Windfall?

Towards a New Appreciation and Advocacy of Green Energy

“Green” redefined as Energy Density

“The greenest fuels are the ones that contain the most energy per pound of material than must be mined, trucked, pumped, piped, and burnt. Extracting comparable amounts of energy from the surface [renewables] would entail truly monstrous environmental disruption….

The greenest possible strategy is to mine and to bury, to fly and to tunnel, to search high and low, where the life mostly isn’t, and so to leave the edge, the space in the middle, living and green.”



- **Peter Huber, *Hard Green: Saving the Environment from the Environmentalists* (Basic Books: 1999), pp. 105, 108.**

Conclusions

- **Man-qua-government, not nature, is the enemy of supply abundance and affordability**
- **The carbon-based conventional energy economy is becoming more sustainable, not less.**
- **The future belongs to the efficient—oil, gas, and coal ('green' is caveman energy)**

Energy education for realism