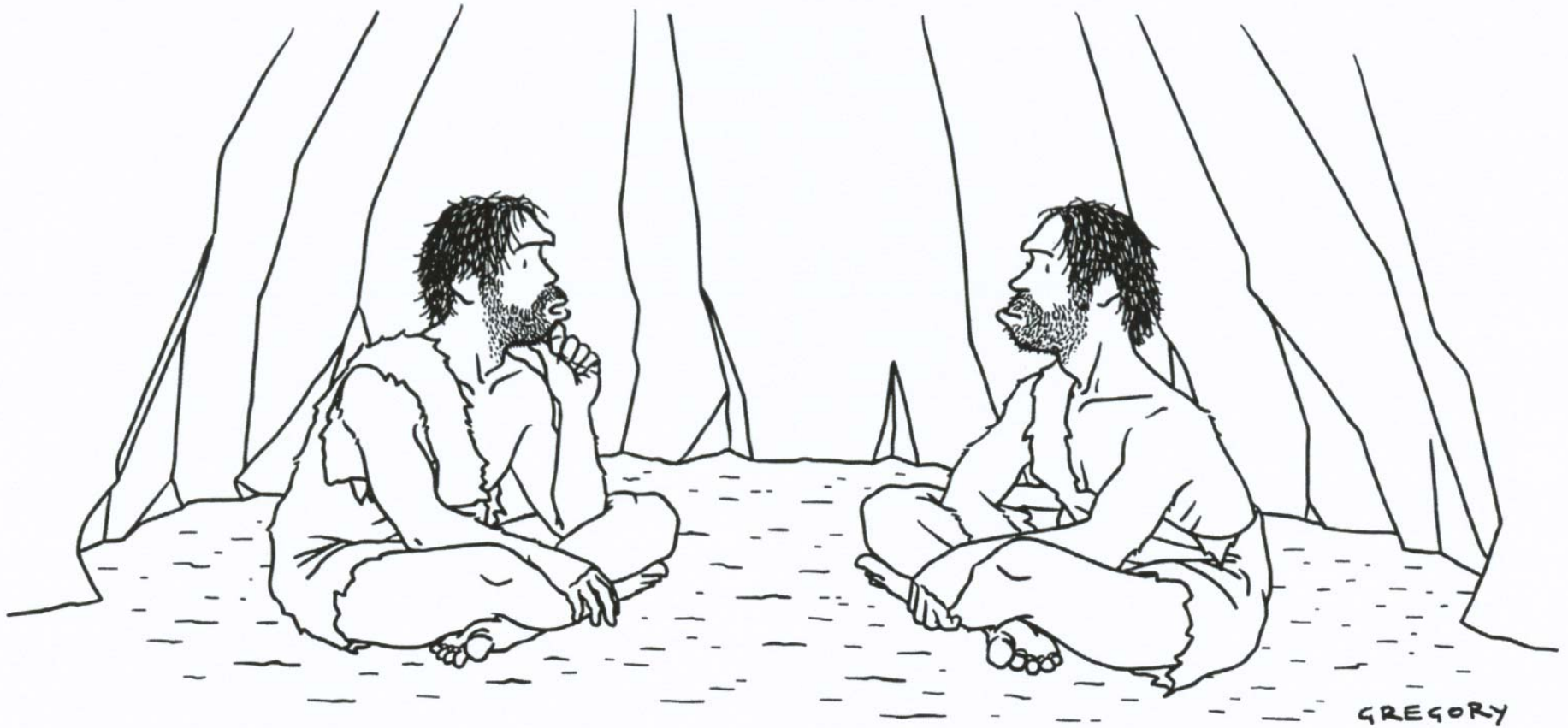




Texas Public Policy Foundation Seminar
Wind Energy: Power for the Future or a lot of Hot Air?

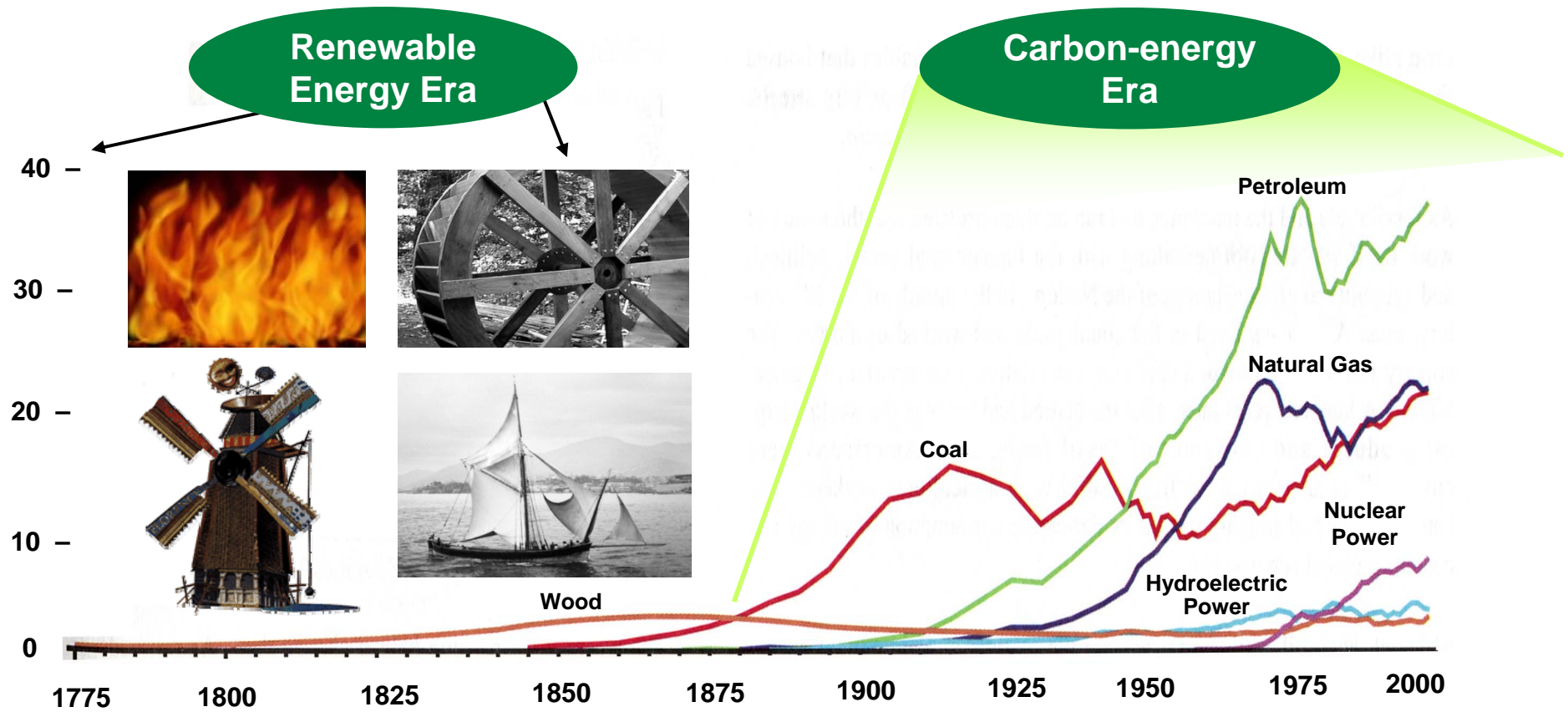
Robert L. Bradley, Jr.
Institute for Energy Research
Austin, Texas
March 25, 2008



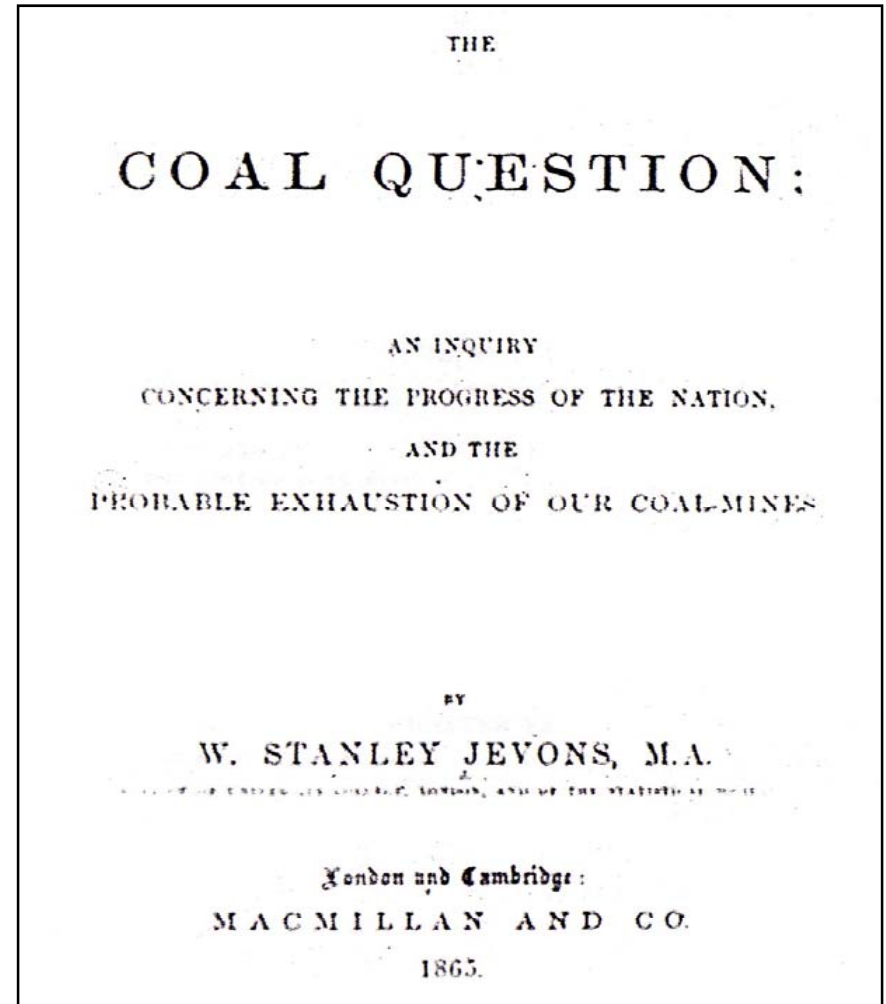
“Something’s just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty.”

our energy is renewable

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



W. S. Jevons: "The Coal Question" (1865)
--there is no going back--



Limits of Windpower



(1865)

“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.”

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.

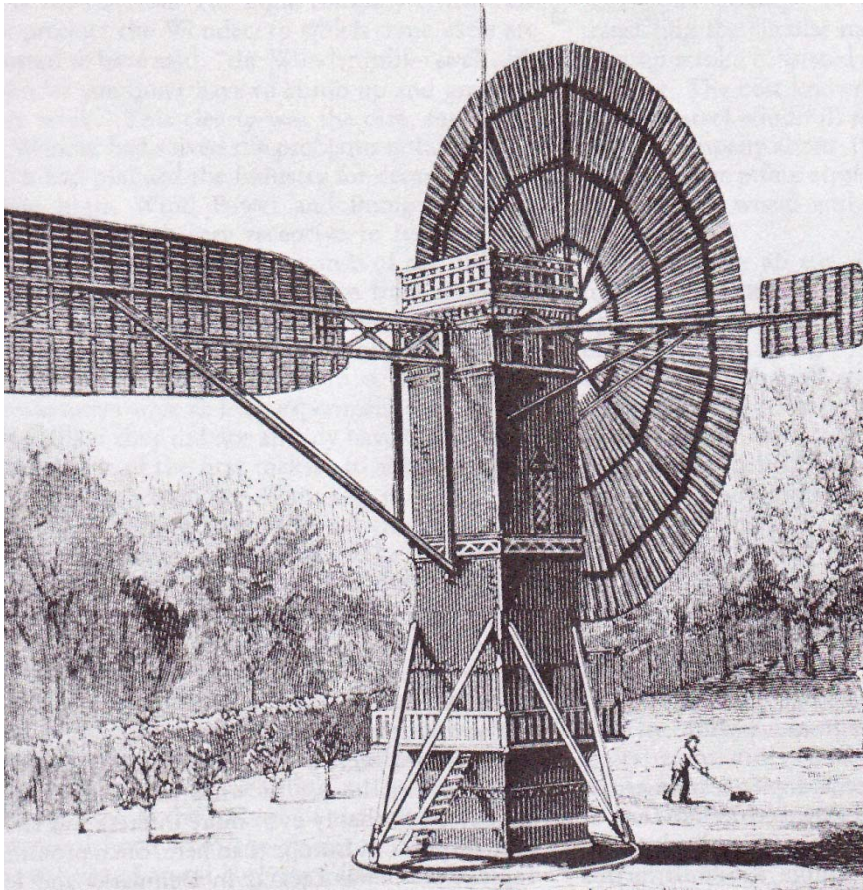
London and Cambridge:
MACMILLAN AND CO.

1865.

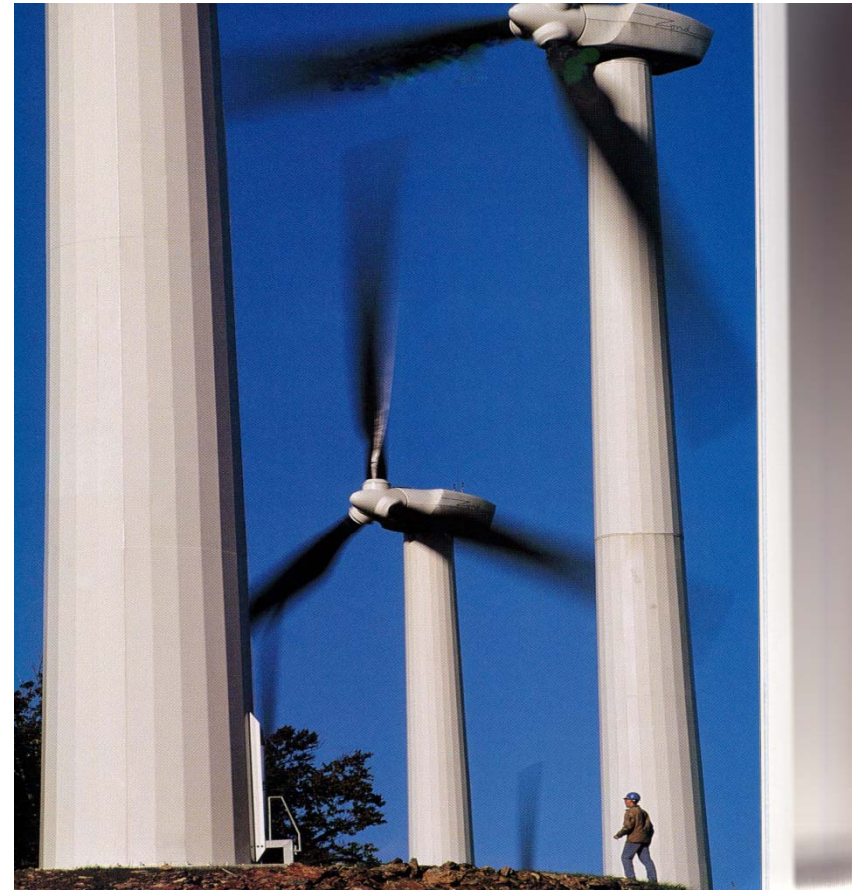
“No possible concentration of windmills ... would supply the force required in large factories or iron works. An ordinary windmill has the power of about thirty-four men, or at most seven horses. Many ordinary factories would therefore require ten windmills to drive them, and the great Dowlais Ironworks,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

Wind Power: Energy Future or Past?

Late 19th Century



Late 20th Century



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.

A10 MONDAY, NOVEMBER 13, 2006

THE WALL STREET JOURNAL.

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

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.”

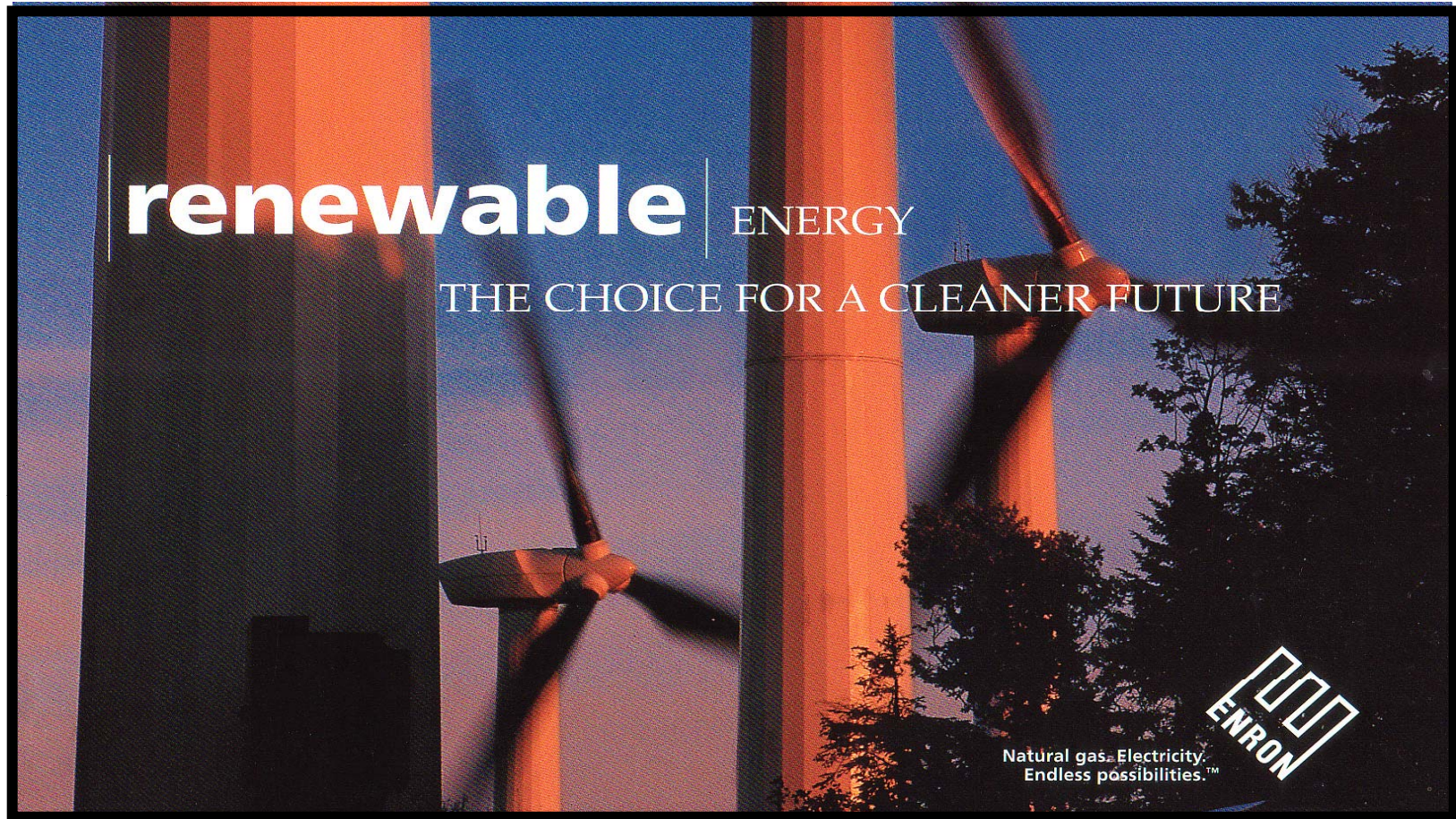
- Worldwatch Institute, 2001

A New “Green” Energy Test?

“The greenest fuels are the ones that contain the most energy per pound of material that must be mined, trucked, pumped, piped, and burnt Extracting comparable amounts of energy from the surface would entail truly monstrous environmental disruption ‘Soft’ energy sources [in comparison] are horribly land intensive.

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 to leave the edge, the space in the middle, living and green.”

- Peter Huber, [Hard Green](#) (1999)



“your choice of green power.”

“Enron’s mini-vision: Become the world’s leading renewable energy company”

Conclusions

- **Renewable energies represent the energy past, not the future**
- **The carbon-based energy era is still young—wind, etc. will not be competitive or market-preferred for many decades**
- **Government renewable mandates waste resources and reduce reliability, hurting the most vulnerable consumers**
- **End mandates and stop throwing good money after bad**

Energy realism, not alarmism

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

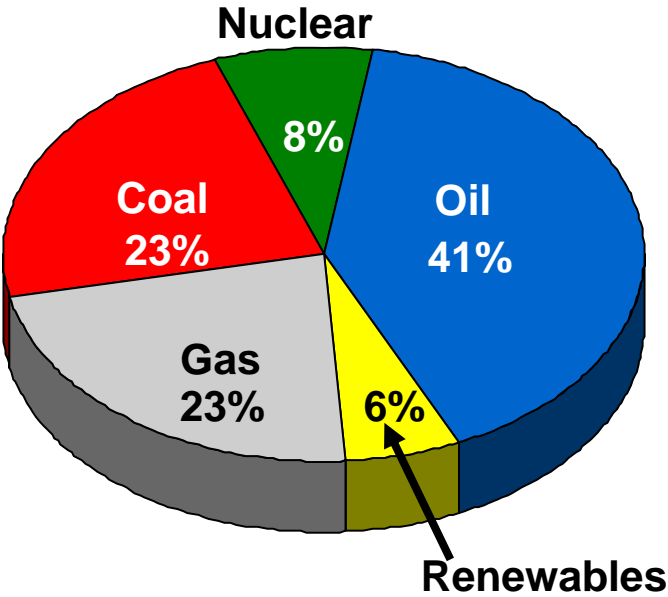
“At the moment solar is not commercially viable for either peak or base load power generation. The best technology produces electricity at something like double the cost of conventional sources for peak demand.”

-Sir John Browne, BP (1997)

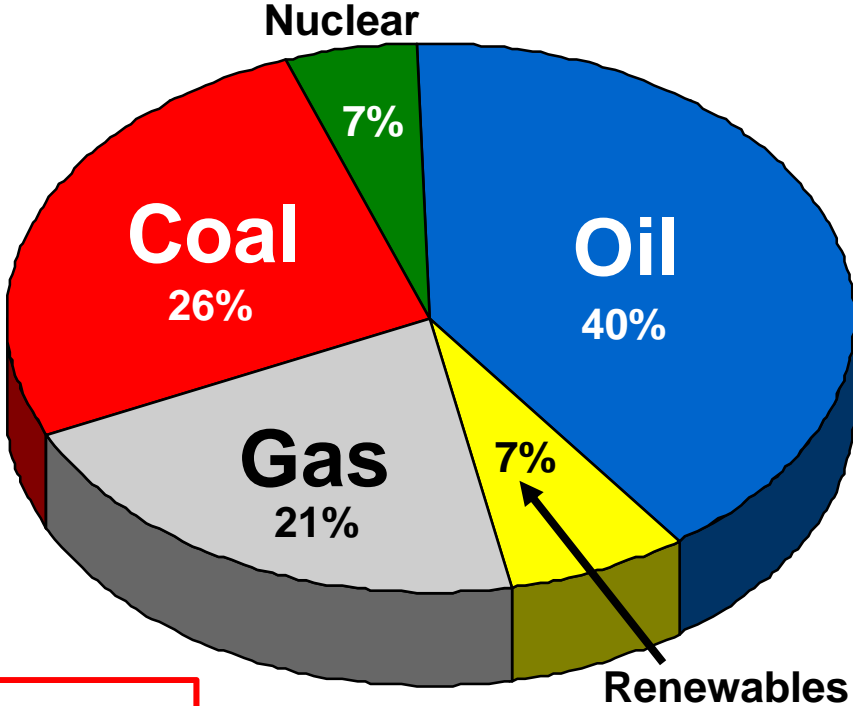
Forecast of U.S. Energy Demand

31% Growth
(1.1%/yr.)

2005 Actual
(100 quads)



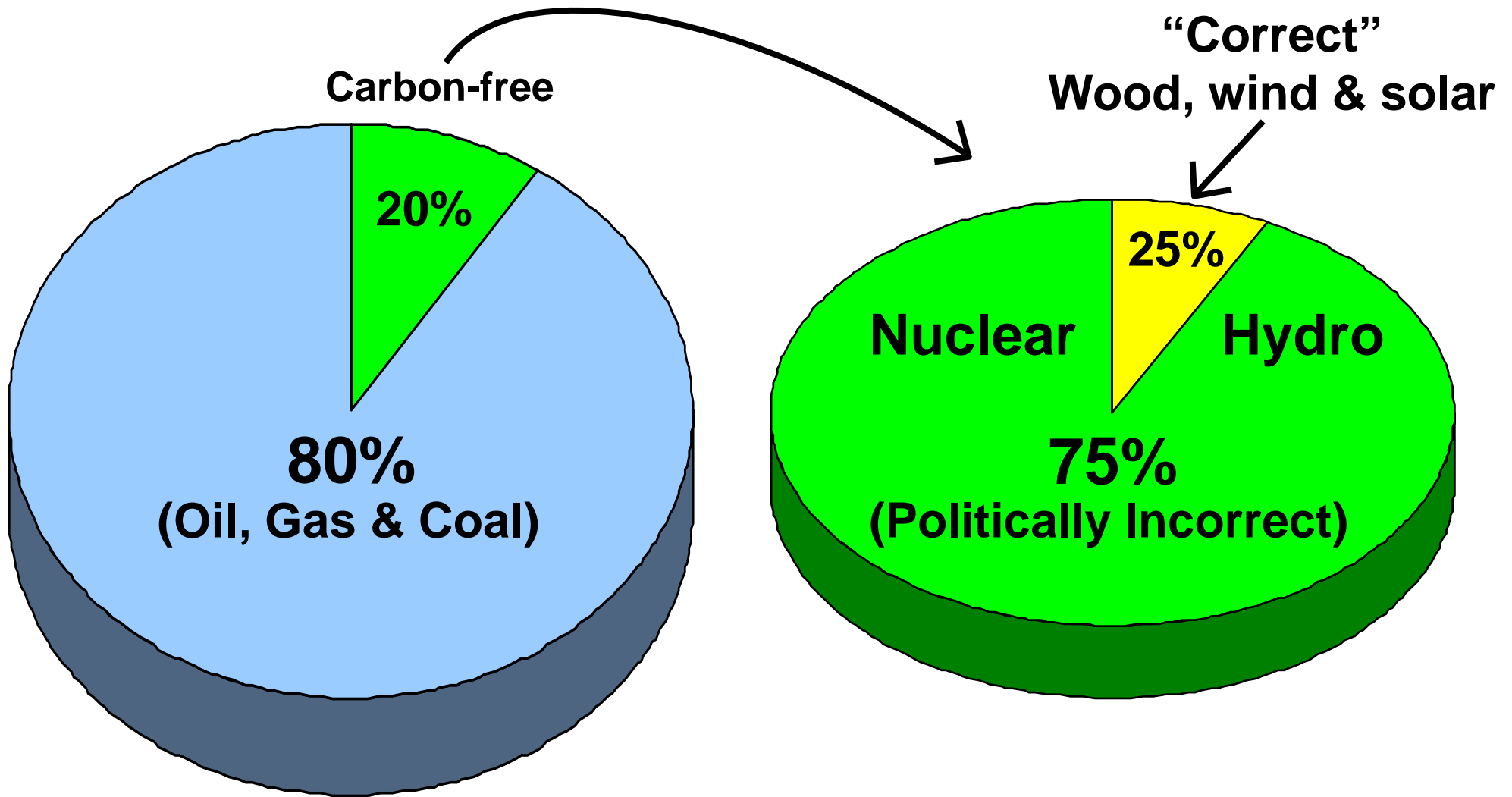
2030 Outlook
(131 quads)



86% Fossil Fuels



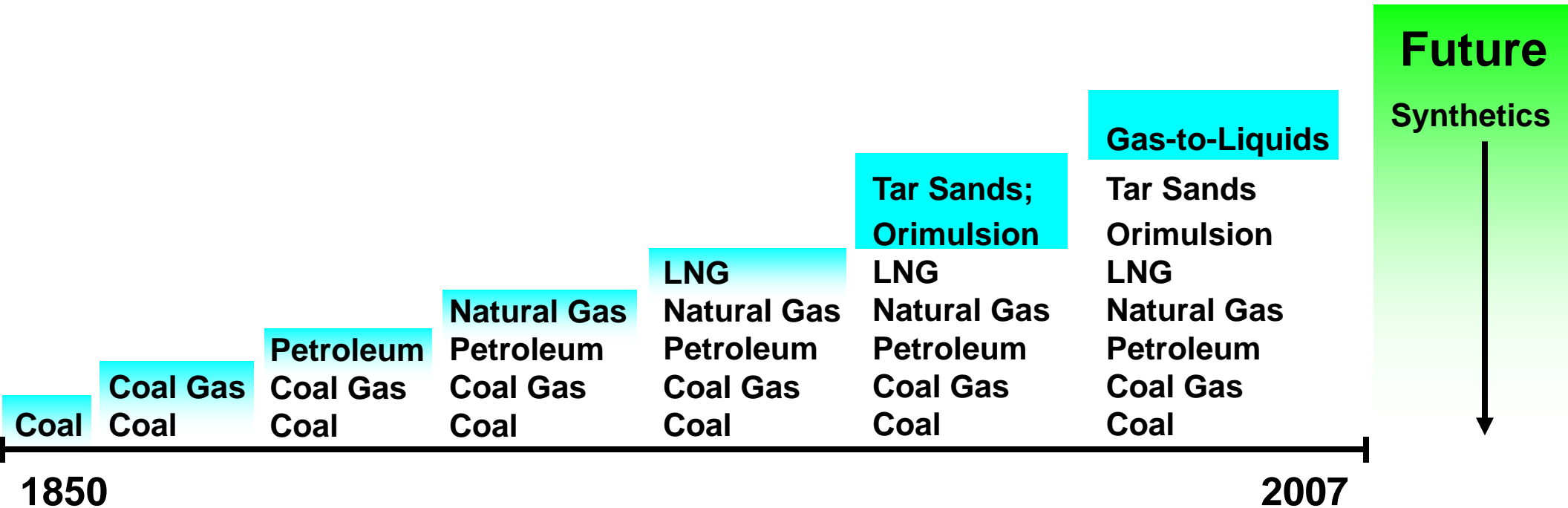
Carbon-free Energies in the U.S. What is Politically Correct?



Source: U.S. DOE

Maturing Hydrocarbon Era

1850 → Present → Future







1850–2000 Usage

Source: IPCC (2001)

Estimated Global Oil Supplies

