

Wind Power Neg

Wind Power Is Bad	2
Wind Power has numerous economic and environmental problems.....	3
Wind Power's Lack of Cost is a Delusion - There Simply Isn't Enough	3
Wind Energy Just Isn't Economical.....	4
Wind Power Will NEVER Be Competitive	4
Total Cost of Wind Power Is Much Higher Than Advertised	5
Wind Power Generation is Responsible for Severe Avian Mortality Rates	6
The 1AC Enters the Environmentally Conscious into a Deal with the Devil.....	6
The Problem of Wind Power - Caused Avian Death Remains Unaddressed.....	7
There Are Many Other Problems with Wind Power	7
Wind Farms Take Up Too Much Space to Be Effective.....	8
The Jobs Rationale of the 1AC and Wind Power Proponents is Flawed.....	9

Wind Power Is Bad

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Wind power is currently the environmentalists' favorite source of renewable energy and is thought to be the most likely renewable energy source to replace fossil fuel in the generation of electricity in the 21st century. Hydropower has lost favor with environmentalists because of the damage it has done to river habitats and freshwater fish populations. Solar power, at least when relied on for central-station or grid electricity generation, is not environmentally benign on a total fuel cycle basis and is highly uneconomic, land intensive, and thus a fringe electric power source for the foreseeable future. Geothermal has turned out to be "depletable," with limited capacity, falling output, and modest new investment. Biomass is also uneconomic and an air-pollution-intensive renewable. Despite its revered status within the orthodox environmental community, wind power poses several major dilemmas. First, wind remains uneconomic despite heavy subsidies from ratepayers and taxpayers over the last two decades. Second, from an environmental viewpoint, wind farms are noisy, land intensive, unsightly, and hazardous to birds, including endangered species. With the National Audubon Society calling for a moratorium on new wind development in bird-sensitive areas, and an impending electricity industry restructuring that could force all generation resources to compete on a marginal cost basis, wind power is a problematic choice for future electricity generation without a new round of government subsidies and preferences.

Wind Power has numerous economic and environmental problems

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Of immediate concern to eco-energy planning is wind power, beloved as a renewable resource with no air pollutants and considered worthy of regulatory preference and open-ended taxpayer and ratepayer subsidies. Despite decades of liberal subsidies, however, the cost of generating electricity from wind remains stubbornly uneconomical in an increasingly competitive electricity market. Many leading wind-power providers have encountered financial difficulty, and capacity retirements appear as likely as new projects in the United States without major new government subsidy. [6] On the environmental side, wind power is noisy, land- intensive, materials-intensive (concrete and steel, in particular), a visual blight, and a hazard to birds. The first four environmental problems could be ignored, but the indiscriminate killing of thousands of birds--including endangered species protected by federal law--has created controversy and confusion within the mainstream environmental community.

Wind Power's Lack of Cost is a Delusion - There Simply Isn't Enough

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Relative prices tell us that wind power is more scarce than its primary fossil-fuel competitor for electricity generation--natural gas, used in modern, state-of-the-art facilities (known in the industry as combined-cycle plants). [7] That is because wind power's high up-front capital costs and erratic opportunity to convert wind to electricity (referred to as a low capacity factor in the trade) more than cancel out the fact that there is no energy cost for naturally blowing wind. [8] Low capacity factors, and still lower dependable on- peak capacity factors, are a source of wind power's cost problem. In California, for instance, where some 30 percent of the world's capacity and more than 90 percent of U.S. wind capacity is located, wind power operated at only 23 percent realized average capacity in 1994. [9] That compares with nuclear plants, with about a 75 percent average capacity factor; coal plants, with a 75 to 85 percent design capacity factor; and gas-fired combined-cycle plants, with a 95 percent average design capacity factor. [10] All those plants produce power around the clock. Wind does not blow around the clock to generate electricity, much less at peak speeds.

Wind Energy Just Isn't Economical

Deepa Babington EROEL.com / May 30, 2005 Title: Solar, wind energy fail Exxon's economics test

Wind energy, for example, is constrained by several factors -- wind farms can be located only in windy areas and backup coal or gas facilities must be used when it isn't windy enough, he said. "We spend a lot more time than you would think studying the economics of wind and the economics of solar energy," Nauman said. "But when you go through all the economics, it is just not attractive."

Wind Power Will NEVER Be Competitive

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

It is erroneous to conclude that even if wind is not competitive now, it soon will be. Wind is competing against improving technologies and the increasing abundance of natural resources. The cost of gas-fired combined-cycle plants--the most economical electricity-generation capacity for central-station power at present--has fallen in the last decade because of improving technology and a 50 percent drop in delivered gas prices adjusted for inflation. [36] The energy-efficiency factors of gas turbines have increased from just above 40 percent in the early 1980s to nearly 60 percent today. [37] Forecasts by the DOE and other sources expect continued efficiency improvements in the years 2000 through 2015 for gas-fired generation. [38] One forecast is that new gas-fired generation of virtually any capacity will cost from \$200 to \$450 per kW, generating power at 2 cents per kWh. [39]

Total Cost of Wind Power Is Much Higher Than Advertised

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

The total cost of wind power is higher than the advertised estimates for several reasons.

1. Wind receives a 1.5 cent per kWh federal tax credit, escalating with inflation, which is approximately one-third of its (as-delivered) selling price. Accelerated depreciation is also given to wind-powered facilities, further lowering their tax rate. Gas-fired electricity generation does not have a tax credit or an option of accelerated depreciation, and natural gas extraction has a total deduction (primarily a scaled-back percentage depletion allowance) of less than 2 percent of its wellhead price. [17] State severance taxes, which totaled \$45 billion for oil and gas extraction between 1985 and 1994, swamp the wellhead deduction. [18] Thus wind power's entire tax credit should be added back in for an apples-to-apples comparison with gas-fired alternatives. Local tax incentives for wind, such as in California, would increase the add-back. 2. Low-cost wind depends on select sites with strong, regular wind currents (Class 4 and above wind speeds), whereas other power generation facilities can be built in larger increments in far more places, or converted or repowered in existing locations. Remote wind sites [19] often result in additional transmission line construction, estimated to cost as much as \$300,000 to \$1 million per mile, [20] in comparison with locally sited gas-fired electricity. The economics of transmission are poor because, although the line must be sized at peak output, wind power's low capacity factor ensures significant underutilization. That adds 0.5 cent per kWh, sometimes more and sometimes less, to the levelized cost of wind. [21] 3. Because wind is an intermittent (unpredictable) generation source, [22] it has less economic value than fuel sources that can deliver a steady, predictable source of electricity. Utilities obligated to provide firm service must either "firm up" the intermittent power at a premium (estimated by power traders to be around 0.5 cent per kWh) [23] or penalize the provider of interruptible supply. Output uncertainty also increases financing costs of outside lenders compared with more predictable, proven power generation. [24] Therefore, a premium has to be added to the interruptible wind rate to compare it with firm generation alternatives such as gas-fired combined-cycle plants. 4. Wind power becomes more expensive if any account is taken of negative environmental externalities as mainstream environmentalists do for fossil-fuel plants (full-cost pricing). Whereas coal and gas plants have incurred higher costs for emission reductions pursuant to Clean Air Act mandates (and in some cases have been penalized in resource planning decisions where state regulators add "externality adders" to plant costs), no penalty has been imposed for the environmental problems of wind farms-- noise, land disruption, visual blight, avian mortality, and air emissions associated with the incremental materials required in wind turbine construction. [25] Neither has there been an allowance for the substantial social cost of taxpayer subsidies. [26]

Wind Power Generation is Responsible for Severe Avian Mortality Rates

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

The universal rationale for the massive public commitment to wind power is that it is environmentally benign. But wind power has at least one major environmental problem--the killing of bird populations--that has begun to cause serious concern among mainstream environmentalists. Wind blades have killed thousands of birds in the United States and abroad in the last decade, including endangered species, which is a federal offense subject to criminal prosecution. [81] Although bird kills are not considered a problem by everyone, they are a problem for environmental groups that lobbied to put the laws on the books, made cost assessments for dead birds and other wildlife after the Valdez accident, and vilify petroleum extraction activity on the North Slope of Alaska as hazardous to wildlife. [82] Such groups as the Sierra Club and the National Audubon Society have criticized wind power's effects on birds, but many eco-energy planners have ignored the problem in their devotion to wind power, in light of the limited number of acceptable alternatives.

The 1AC Enters the Environmentally Conscious into a Deal with the Devil

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Author Amy Linn pointedly concludes her article: By accepting the compromises of the real world and enthusiastically supporting the establishment of the wind industry, [environmentalists] entered the devil's bargain that now prevents them from fighting the power companies. . . . Here in the almost wilds of Altamont Pass, the environmentalists and Kenetech have reached the point where solutions become problems--the point at which there is blood on the answer. [85] The avian mortality problem of wind power is different from bird mortality due to stationary objects. Explained one study, "Wind farms have been documented to act as both bait and executioner--rodents taking shelter at the base of turbines multiply with the protection from raptors, while in turn their greater numbers attract more raptors to the farm." [86]

The Problem of Wind Power - Caused Avian Death Remains Unaddressed

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Proponents of wind power have argued that the bird death problem is being effectively addressed and should not slow the growth of the industry. Yet the problem, which has been studied since the mid-1970s, [96] continues unabated two decades later. [97] Like the claims that wind power will soon be economic, claims that (in the words of a U.S. Windpower representative) "we have almost met our objective of being an environmentally benign power resource" [98] ring hollow. Even if a technological breakthrough addressing bird kills is achieved (which is certainly possible), any incremental cost of using that technology would further worsen the competitive plight of wind power.

There Are Many Other Problems with Wind Power

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997 Title: Renewable Energy: Not Cheap, Not "Green"

Yet Altamont Pass's 7,000 turbines (located near Cavanagh's San Francisco office) have a record of sizable avian mortality, large land-use requirements, disturbing noise, and "visual blight." [102] The irony of visual blight was not lost on environmental philosopher Roderick Nash, who, referring to the Santa Barbara environmentalists, asked, "If offshore rigs offend, can a much greater number of windmills be any better?" [103] Wind (like solar) "mars" the landscape all the time, not "at least for a time." [104] Environmentalists have raised concerns over erosion from service roads cut into slopes (an important problem for California, where mud slides are a hazard), [105] "fugitive dust" from unpaved roads, [106] flashing lights and the red-and-white paint required by the FAA on tall towers, [107] rushed construction for tax considerations, [108] fencing requirements, [109] oil leakage, [110] and abandoned turbines. [111] The "not in my back yard" problem of wind turbines may seem a trivial nuisance for urbanites, but for rural inhabitants, who "choose to live in such locations . . . primarily because the land is unsuitable for other urban uses," [112] there is an environmental cost.

Wind Farms Take Up Too Much Space to Be Effective

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute

The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997

Title: Renewable Energy: Not Cheap, Not "Green"

Wind farms also fail the land-use test compared with fossil-fuel alternatives. A wind farm requires as much as 85 times more space than a conventional gas-fired power plant. [117] Gipe estimates the range to be between 10 and 80 acres per megawatt--from 30 to more than 200 times more space than needed for gas plants. [118] Wide spacing (a 50 MW farm can require anywhere between 2 and 25 square miles) is necessary to avoid wake effects between towers. [119] The world's 5,000 MW (nameplate) wind-power capacity in 1995 consisted of 25,000 turbines [120] little bang for the land usage and visual blight buck. The argument that the actual space used by wind towers is much smaller than the total acreage of wind farms ("as little as 1 percent of the land is actually occupied") [121] is the "footprint" argument that eco-energy planners refuse to consider for petroleum extraction in the Arctic National Wildlife Refuge in Alaska. [122] Consistency aside, "the visual impact of wind turbines on the countryside is one of their most contentious issues." [123]

The Jobs Rationale of the 1AC and Wind Power Proponents is Flawed

Robert L. Bradley Jr President of the Institute for Energy Research in Houston, Texas, the author of the two-volume Oil, Gas, and Government: The U.S. Experience, and an adjunct scholar of the Cato Institute

The Cato Institute: <http://www.cato.org/cgi-bin/scripts/printtech.cgi/pubs/pas/pa-280.html> / August 27th, 1997

Title: Renewable Energy: Not Cheap, Not "Green"

A jobs-creation rationale for wind power is marshaled by supporters, almost as a last line of defense. The American Wind Energy Association trumpets the fact that about \$3.5 billion is invested in the U.S. [wind- power] industry, where watt-for-watt, dollar-for-dollar, that investment creates more jobs than any other utility-scale energy source. In 1994, wind turbine and component manufacturers contributed directly to the economies of 44 states, creating thousands of jobs for American communities. [124] The high-cost propensity of wind power is a negative, not a positive, aspect of the industry. Prices reflect relative scarcity, and the price of wind-power energy is substantially higher than the price of electricity from other sources. Resources devoted to wind power are thus wasted in an economy where wants are greater than the resources available to meet them, and better alternatives are forgone. Without subsidies, less renewable energy infrastructure would have been built and consumers would have had lower cost electricity. The saved resources (land, labor, and capital) would have gone to a more competitive source of electricity or, more likely, given electricity-generation overcapacity, to a different endeavor entirely. Electricity consumers, in turn, would have incremental savings to spend elsewhere in the economy. The result of wind-power investments in California is the existence of an uneconomic renewable energy industry and an underused natural gas infrastructure. Consequently, it has contributed to artificially high rates and a substantial ratepayer surcharge for stranded cost recovery (jargon for generation facilities and third-party contracts incapable of delivering power at competitive prices in a restructured market; utility companies argue that the public should compensate them for those now uneconomic investments) in the restructuring period. Subsidizing renewable energy for its own sake is akin to "creating" jobs by digging holes and filling them back up. The fundamental law of economic efficiency--"employ[ing] the available means in such a way that no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed for the attainment of a want less urgently felt" [125] is violated.