

COMMENTS

Why the United States Does Not Have a Renewable Energy Policy

by E. Donald Elliott

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For good or ill, the United States seems more like a western European country every day, but the contrast could not be starker when it comes to renewable energy policy. Many countries in Europe get over one-third—and some, over one-half—of their electricity from renewable sources such as wind and solar. Europeans across the political spectrum support government policies to promote renewable energy, but government support for renewable energy is deeply controversial in the United States. In their first presidential debate, Mitt Romney famously attacked Barack Obama for “picking losers” by spending \$90 billion to promote green energy.¹ Why doesn’t the United States have a renewable energy policy like those in Europe? The answers lie deep in our political structure and political culture, as well as our natural endowment of huge resources of fossil energy, including shale gas and unconventional oil.

I. Comparing Renewable Energy Development in the United States and Europe

Portugal is one of the world leaders in renewable energy. Many feel that we have much to learn from Portugal. The *New York Times* recently reported that about 45% of the electricity in the grid in Portugal comes from renewable

energy sources.² That compares with only 12% in the United States, and of that total, about 10% is hydropower, so we in the United States are actually in the range of only about 2% of our electricity coming from non-hydro renewable energy sources, as opposed to 45% in Portugal. A number of other countries in the European Union (EU) also have renewable energy numbers comparable to Portugal’s,³ and one sees many windmills dotting the countryside.

On the surface, the renewable energy gap between the United States and the EU is surprising in that every president of the United States since Richard Nixon has declared as a national goal of the United States to end our addiction to imported petroleum.⁴ President Obama in his 2011 State of the Union address made moving to a clean energy economy one of the signature aspects of his presidency.⁵ But even his initiatives were designed primarily to promote the development of new green energy *technologies*, not to deploy existing renewable energy technology to decrease the dependence of the grid on fossil fuels.⁶ I will try to explain why we have no effective national renewable energy policy in the United States.

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1. Transcript of the first presidential debate between President Obama and Republican nominee Mitt Romney, Oct. 3, 2012, in Denver, available at <http://www.npr.org/2012/10/03/162258551/transcript-first-obama-romney-presidential-debate>:

[Y]ou put \$90 billion—like 50 years worth of [tax] breaks [for the oil industry]—into solar and wind, to—to Solyndra and Fisker and Tesla and Ener1. . . . I had a friend who said, you don’t just pick the winners and losers; you pick the losers. . . . [T]his is not the kind of policy you want to have if you want to get America energy-secure.

2. Elisabeth Rosenthal, *Portugal Gives Itself a Clean-Energy Makeover*, N.Y. TIMES, Aug. 10, 2010, at A1, <http://www.nytimes.com/2010/08/10/science/earth/10portugal.html> (last visited Jan. 3, 2013).

3. PROMOTING SUSTAINABLE ELECTRICITY IN EUROPE: CHANGING THE PATH DEPENDENCE OF DOMINANT ENERGY SYSTEMS 286 tbl. 10.1 (Williams M. Lafferty & Audun Rund eds., Edward Elgar Pub. Ltd. 2008).

4. MICHAEL J. GRAETZ, *THE END OF ENERGY: THE UNMAKING OF AMERICA’S ENVIRONMENT, SECURITY AND INDEPENDENCE* 250-51 (MIT Press 2011); DAVID SANDALOW, *FREEDOM FROM OIL: HOW THE NEXT PRESIDENT CAN END THE UNITED STATES’ OIL ADDICTION* (McGraw Hill 2008).

5. President Barack Obama, 2011 State of the Union: Winning the Future, <http://www.whitehouse.gov/state-of-the-union-2011> (last visited Jan. 3, 2013).

6. The principal green energy program under the Obama Administration is \$34.5 billion in loan guarantees under Section 1703 of Title XVII of the Energy Policy Act of 2005, which authorizes the U.S. Department of Energy to support “innovative clean energy technologies that are typically unable to obtain conventional private financing due to high technology risks.” See 10 C.F.R. §609.2 (defining an “eligible project” as a project “that employs a New or Significantly Improved Technology that is not a Commercial Technology . . .”). A second program, the Section 1705 Loan Program, which expired on September 30, 2011, did authorize loans to “certain renewable energy systems, electric power transmission systems, and leading edge bio-fuels.” This program did support some renewable energy projects, including the 845-megawatt wind-powered Caithness Shepherds Flat electrical generating facility in Oregon, but here too the primary focus was on stimulating innovative technologies, not deploying existing technology into the grid.

We must first distinguish between a policy and a plan. We do have a *plan*—or more accurately, a long series of plans. Under the 1977 law that created the federal U.S. Department of Energy (DOE), every two years the president and DOE are required by law to put together a “national energy policy plan.”⁷ The latest one was announced March 30, 2011.⁸ For 35 years, these semi-annual national energy plans have been ignored. They are written, announced, and go directly into the dustbin of history. Unlike the Renewable Energy Directive in Europe,⁹ which creates binding obligations on the Member states, our “national energy policy plan” is merely a semiannual essay by the energy experts in the federal government that few read and no one follows.

One could see our failure to implement an effective renewable energy policy as a symptom of a more general breakdown in the ability of national political institutions in the United States to address environmental, as well as many other, pressing policy issues.¹⁰ For the moment, however, I want to try to understand our absence of a national renewable energy policy not simply as a failure of our national government to develop effective policies to achieve declared national goals, but also as a deeper expression of our political structure and political culture, and to suggest that there may be some wisdom, as well as some obvious disadvantages, to our hesitancy to be a leader in the renewable energy parade.¹¹

II. Structural Impediments: The Coordinate Model of Authority in the United States

A perceptive 19th century European, Walter Bagehot, the first editor of *The Economist* and the founder of political science, wrote many years ago:

The English constitution in a word is framed on the principle of choosing a single sovereign authority and making

it good. The American on the principle on having many sovereign authorities and hoping that their multitude will atone for their inferiority.¹²

A leading contemporary expert on comparative law, my colleague at Yale Law School, Mirjan R. Damaška, has made a similar point in a modern context. Damaška says a defining feature of the U.S. legal system is “a coordinate model of authority” in which multiple power centers all address the same issue.¹³ That political structure makes it extremely difficult to develop a coordinated national policy, which can only be done by reaching consensus among many different power centers. But it also limits losses from erroneous policies: Bagehot’s multitude atoning for their inferiority.

A. Fragmented Authority as an Impediment to a National Renewable Energy Policy

One aspect of this coordinate model of authority is that 50 states regulate electric utilities, often with different policies, whereas the wholesale transportation of electricity is regulated by the federal government.¹⁴ The bright spots with regard to renewable energy policy in the United States are the many renewable portfolio standards (RPS) that have been adopted at the state level. These are state laws that require local utilities to supply a certain percentage of the electric power that they distribute from renewable sources. What counts as a renewable source varies from state to state, as do the target percentages. Seven states have so-called voluntary RPSes, and 29 states, plus the District of Columbia and Puerto Rico, have enacted mandatory RPSes.¹⁵ The most ambitious is California, which recently announced a goal of obtaining 33% of the state’s electricity from renewable sources by 2020.¹⁶

Thus, even our most ambitious state is well behind Portugal and most other EU countries, but in over one-half our country, state governments are doing something to promote electricity from renewable energy, even though to

7. Title VIII of the Department of Energy Organization Act of 1977, 42 U.S.C. §7321, requires that the president propose and submit a National Energy Policy Plan every two years. The U.S. Congress then reviews it and may propose changes. 42 U.S.C. §7322.

8. BLUEPRINT FOR A SECURE ENERGY FUTURE, Mar. 30, 2011, [available at](http://www.whitehouse.gov/sites/default/files/blueprint_secure_energy_future.pdf) http://www.whitehouse.gov/sites/default/files/blueprint_secure_energy_future.pdf.

9. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion of the Use of Energy From Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC, [available at](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>.

10. See generally E. Donald Elliott, *Another View: Politics Failed, Not Ideas*, 28 ENVTL. F. 42 (Sept./Oct. 2011):

The same period in which the American national political system has become dysfunctional on environmental issues is also one in which it hasn’t done so well on many other important issues, such as managing our financial affairs, reforming Social Security and the income tax system, or keeping us out of elective foreign wars.

11. Elsewhere, I have suggested more generally that legal systems may be at an advantage when they are not the first to experiment with new devices, but can learn from the experience of others. E. Donald Elliott, *U.S. Environmental Law in Global Perspective: Five Do’s and Five Don’ts From Our Experience*, 2010 NAT’L TAIWAN U. L. REV. 2 (discussing “third-mover advantage”), [available at](http://digitalcommons.law.yale.edu/fss_papers/27171) http://digitalcommons.law.yale.edu/fss_papers/27171.

12. WALTER BAGEHOT, *THE ENGLISH CONSTITUTION AND OTHER POLITICAL ESSAYS* 296 (rev. ed. 1901).

13. MIRJAN R. DAMAŠKA, *THE FACES OF JUSTICE AND STATE AUTHORITY: A COMPARATIVE APPROACH TO THE LEGAL PROCESS* (Yale Univ. Press 1986); Mirjan R. Damaška, *Structures of Authority and Comparative Criminal Procedure*, 84 YALE L.J. 480 (1975), [available at](http://digitalcommons.law.yale.edu/fss_papers/1590) http://digitalcommons.law.yale.edu/fss_papers/1590.

14. JOSEPH P. TOMAIN & RICHARD D. CUDAHY, *ENERGY LAW IN A NUTSHELL* 264 (2004). There is little doubt that Congress would have constitutional power to regulate electricity generation and sales on a national basis, *Houston, East & West Texas Railway Co. v. United States* (the Shreveport Rate Cases), 234 U.S. 342 (1914) (Congress may regulate intrastate commerce that has a significant effect on interstate commerce), but it has declined to assert federal authority over retail sales of electricity, which are traditionally an area of state authority. *New York v. FERC*, 535 U.S. 1 (2002). Richard J. Pierce, *The State of the Transition to Competitive Markets in Natural Gas and Electricity*, 15 ENERGY L.J. 323 (1994) (noting that Congress has “specifically denied the [Federal Energy Regulatory Commission] the power necessary to mandate access for retail transactions”).

15. RPS Policies, DSIRE: Database of State Incentives for Renewables & Efficiency, <http://www.dsireusa.org/summarymaps/index.cfm?ee=1&RE=1> (last visited Jan. 3, 2013).

16. *Brown Signs 33 Percent California RPS*, ENERGY DAILY, Apr. 13, 2011, at 2.

date we have been unable to pass a federal RPS that would apply nationally. In sum, we have a diversity of policies that are set at the state level, with over one-half of the states mandating some generation from renewables, but the others not choosing to make that a priority.

B. Separation of Powers as an Impediment to a National Renewable Energy Policy

The second example of how the coordinate model of authority stands in the way of our developing a national renewable energy policy is *separation of powers*. Unlike parliamentary systems in Europe in which the executive and the majority of the legislature are of the same party, a much more typical situation in the United States is the one we have now in which one party controls one house of the U.S. Congress and the presidency, but the other house of Congress is controlled by the other party. “Divided Government,” with different political parties in control of different parts of the government, has been a recurring feature of American political life.

Divided Government is particularly important for national renewable energy policy because a strong wing of one of the two major political parties is generally opposed to government action to promote renewables. Recently, *New York Times* columnist David Brooks perceptively summarized this central schism in American politics:

Democrats tend to be skeptical that dispersed consumers can get enough information to make smart decisions. . . . Democrats generally seek to concentrate decision-making and cost-control power in the hands of centralized experts. . . . Republicans at their best are skeptical about top-down decisionmaking. They are skeptical that centralized experts can accurately predict costs. They are skeptical that centralized experts can predict human behavior accurately enough to socially engineer new programs. . . . They are skeptical that political authorities can, in the long run, resist pressure to hand out free goodies. They are also skeptical that planners can control the unintended effects of their decisions. They argue that a decentralized process of trial and error will work better, as long as the underlying incentives are right. . . . Democrats have much greater faith in centralized expertise. Republicans . . . believe that the world is too complicated, knowledge is too imperfect. They have much greater faith in the decentralized discovery process of the market.¹⁷

While Brooks was writing specifically about health care policy, much of what he wrote also applies to energy policy. Many Republicans, like former Bush White House adviser David Frum, argue that we should leave energy choices to the market:

Th[e] command-and-control method has been tried and tried again, always with conspicuous lack of success, and

for all the obvious reasons: Because government favors big “imagination-capturing” technologies over incremental adjustments. Because government makes a bad venture capitalist. Because democratic governments (rightly) cannot decree the kinds of lifestyle changes that price signals will induce voluntarily. What government will order empty nesters to move from the exurbs to downtown? But a 60-minute commute and \$5 gas will persuade people to do what no bureaucrat would dare command.¹⁸

C. Changing Policies as an Impediment to a National Renewable Energy Policy

A closely related aspect of our politics that has made it difficult for the national government to promote renewable energy is frequent changes of control of government by our political parties and the *shifting policies* that result. A good example is our national policy to promote an alternative to gasoline-powered automobiles. Our two major political parties generally agree on this objective, but they differ on the means to accomplish it, with the result that mixed and inconsistent signals are sent to industry and the states. In 2003, then-President George W. Bush in his State of the Union speech announced an initiative to devote billions of dollars to develop the *hydrogen-powered* fuel cell car.¹⁹ When President Obama came into office five years later in 2008, he cut 80% of the funding for the hydrogen car that had been sponsored by his predecessor.²⁰ In his 2011 State of the Union address, Obama announced that now we are going to promote *electric-powered* cars instead.²¹

Shifting policies and changing priorities as different parties come to power in the United States has been one of the major difficulties that we have had in promoting renewable energy. In a 2009 report, our National Academy of Sciences identified as one of the three top barriers to promoting renewable energy as the “lack of *sustained policies*.”²² The Germans have made a long-term commitment to buy renewable energy for 20 years, which facilitates developers in financing their projects.²³ Our policies tend to come and

17. David Brooks, *Where Wisdom Lives*, N.Y. TIMES, June 6, 2011, <http://www.nytimes.com/2011/06/07/opinion/07brooks.html?r=1> (last visited Jan. 3, 2013).

18. David Frum, *Obama's Doomed Green Jobs Plan: Just Tax Oil and Let Markets Do the Rest*, THE WEEK.COM, <http://theweek.com/bulpen/column/211455/obamas-doomed-green-jobs-plan> (last visited Jan. 3, 2013).

19. George W. Bush, President of the United States, State of the Union, (Jan. 28, 2003) (“Tonight I’m proposing \$1.2 billion in research funding so that America can lead the world in developing clean, hydrogen-powered automobiles.”).

20. *Obama Puts Brakes on the Hydrogen Car*, WALL ST. J., <http://blogs.wsj.com/washwire/2009/05/07/obama-budget-puts-brakes-on-hydrogen-car/> (last visited Jan. 3, 2013).

21. Barack Obama, President of the United States, State of the Union (Jan. 25, 2011). The American Reinvestment and Recovery Act, Pub. L. No. 111-5 (2009), also known as the stimulus bill, included approximately \$2 billion for grants to support 30 factories that produce batteries, motors, and other electric vehicle components. See DEPARTMENT OF ENERGY, ONE MILLION ELECTRIC VEHICLES BY 2015: FEBRUARY 2011 STATUS REPORT 5 (2011).

22. National Research Council, *America's Energy Future Panel on Electricity From Renewable Resources, Electricity From Renewable Resources: Status, Prospects, and Impediments Executive Summary* 3 (2009) (“The current primary barriers are [two others and] . . . the lack of sustained policies.”).

23. FRESHFIELDS BRUCKHAUS DERINGER LLP, NEW GERMAN RENEWABLE ENERGIES ACT ADOPTED JULY 2008, available at <http://www.freshfields.com/publications/pdfs/2008/july16/23382.pdf>. (“Remuneration generally con-

go.²⁴ And they tend to come and go on shorter time horizons than those that are necessary to make long-term capital investments in infrastructure. One of our key structural problems to implementing a national renewable energy policy is that we have difficulty maintaining policies and sending consistent signals to the market over the long time periods required to replace capital stock.

Back in 2004, in reliance on then-President Bush's hydrogen car policy, former California Gov. Arnold Schwarzenegger approved the so-called California Hydrogen Blueprint Plan that set an ambitious goal of 100 statewide hydrogen fueling stations by the end of 2010 with a longer term goal of 250 hydrogen fueling stations.²⁵ Only 23 have actually been built,²⁶ and they are largely unused today. California's investment to support a now-abandoned national policy was costly but much less painful than if the whole United States had made a "more effective" investment in building hydrogen fueling stations across the entire nation. Perhaps Bagehot's multitude atoning for inferiority again? California is now planning to build 10,000 electric vehicle charging points.²⁷ But who knows whether they will ever actually be built? So far, sales of electric vehicles have been disappointing.²⁸ If the shale gas boom continues, the "car of the future" may turn out to be powered by compressed natural gas (CNG), rather than either the hydrogen fuel cells or rechargeable electric batteries that our national politicians have been promoting.²⁹

D. Unrepresented Future Generations as Impediment to a National Renewable Energy Policy

In addition, there is not a strong political constituency for renewable energy or energy efficiency in America. There is some support, of course, but the core difficulty

in organizing around these issues is that the putative beneficiaries are largely future generations, and they are by definition unrepresented in our current political process.³⁰ This may be more of our problem in our system in which politicians are subject to frequent reelection. Promoting renewable energy is the kind of issue to which our political institutions are particularly ill-suited, because it would require an economic commitment over a sustained period to achieve benefits that are not obvious today but inure largely to future generations that are not represented in our current politics.

III. Cultural Impediments: Cheap Energy Now Versus Future Generations

In addition to these structural features of our political system, there are also important cultural differences between the United States and Europe that also help to explain why our attitudes toward developing a national renewable energy policy are so different.

A. The "Right" to Cheap Energy as an Impediment to a National Renewable Energy Policy

Our history has deeply embedded the expectation of *cheap energy* in our citizens. People complain mightily when gas reaches \$4 per gallon in the United States. Some analysts even suggested that President Obama's bid for reelection was threatened by rising gasoline prices, pointing out that in America there is a stronger correlation between low prices of gasoline and presidential popularity than there is with unemployment rates.³¹

Some studies claim that the fully loaded-in social cost of gasoline is in the range of \$6-15 per gallon³² and yet our public is very upset when the price rises as high as \$4 per gallon, which is about one-half the price in Europe. This is a bipartisan problem. One of the few things that the first Bush Administration and the Clinton Administration agreed on is that energy prices in the United States were too low. The first Bush Administration proposed an increase in the gasoline tax; the Clinton Administration proposed a British thermal unit tax.³³ Both of them had to back down as a result of public outcry. So too did current DOE Secretary Steven Chu, who had declared before he took office that gasoline prices were too low, but back-pedaled in the face of a perceived threat to President Obama's

tinues for 20 years after the plant is commissioned." See also Volkmar Lauber & Lutz Mez, *Three Decades of Renewable Electricity Policies in Germany*, 15:4 ENERGY & ENV'T 599-623 (2004).

24. For a chart showing the enervating effects on capacity in the wind industry of the sporadic lapses of federal tax credits, see U.S. Energy Information Administration, *Wind Energy Tax Credit Set to Expire at the End of 2012*, <http://www.eia.gov/todayinenergy/images/2012.11.21/windcaplarge.png> (last visited Jan. 5, 2013). The production tax credit was extended at the last minute by the "fiscal cliff" deal. *Victory for Renewable Energy in Fiscal Cliff Deal*, PETER LEHNER'S BLOG (Jan. 4, 2013), http://switchboard.nrdc.org/blogs/plehner/victory_for_renewable_energy_i.html (last visited Jan. 5, 2013). But it is difficult to plan when the economics of projects are held hostage to last-minute brinkmanship in Congress.

25. Danny King, *California Revokes "Hydrogen Highway" Grants*, AUTOBLOG-GREEN, posted May 30, 2012, <http://green.autoblog.com/2012/05/30/california-revokes-hydrogen-highway-grants/> (last visited Jan. 5, 2013). See also Annie Birdsong, *California Drives the Future of the Automobile*, WORLDWATCH INST., <http://www.worldwatch.org/node/573> (last visited Jan. 5, 2013).

26. *Id.*

27. *Id.*

28. Jack Ewing, *Soft Sales Crimp Outlook for Electric Cars*, N.Y. TIMES (Sept. 30, 2012), http://www.nytimes.com/2012/10/01/business/global/electric-vehicles-a-low-priority-for-automakers.html?_r=0 (last visited Jan. 5, 2013).

29. Ken Silverstein, *All Roads Lead to Natural Gas-Fueled Cars and Trucks*, FORBES (Dec. 15, 2012); see also *The Natural-Gas Alternative: The Pros & Cons of Buying a CNG-Powered Car*, CONSUMER REP. (Mar. 2012), <http://www.consumerreports.org/cro/2012/03/the-natural-gas-alternative/index.htm> (last visited Jan. 5, 2013).

30. See ANDREW DOBSON & ROBYN ECKERSLEY, *POLITICAL THEORY AND THE ECOLOGICAL CHALLENGE* 186-88 (2006); Matthew W. Wolfe, *The Shadows of Future Generations*, 57 DUKE L.J. 1897, 1901-02 (2008).

31. David Paul Kuhn, *Could Gas Prices Sink Obama's Reelection?*, REAL CLEAR POL., Mar. 9, 2011, http://www.realclearpolitics.com/articles/2011/03/09/could_gas_prices_sink_obamas_reelection_2012_study_president_approval_gas_price_109157.html (last visited Jan. 3, 2013).

32. International Center for Technology Assessment, *The Real Price of Gasoline: An Analysis of the Hidden External Costs Consumers Pay to Fuel Their Automobiles* (1998), available at <http://www.icta.org/doc/Real%20Price%20of%20Gasoline.pdf>.

33. SALVATORE LAZZARI, CONGRESSIONAL RESEARCH SERV., *ENERGY TAX POLICY: HISTORY AND CURRENT ISSUES* 6 (2008).

reelection.³⁴ We have created a fundamental expectation in our democratic voters that energy prices must remain low.³⁵

Some of this is a result of history and our large domestic supplies of fossil fuels. The United States is one of the world's largest fossil energy producers, unlike many countries that have led the way in developing renewable energy sources. We are either blessed (or cursed, depending upon one's perspective³⁶) with large domestic supplies of oil, coal, and natural gas. In 1917, we were the largest oil producer in the world and produced two-thirds of the world's oil.³⁷ Oil production peaked in the United States about 1970, but we are still the third largest producer of petroleum in the world (after Saudi Arabia and Russia) and we produce about twice as much petroleum as the fourth largest producer, Iran.³⁸ We produce on the order of five million barrels per day, but we consume 14 million per day, so we are also by far the largest importer of oil.³⁹ But historically, we have had large domestic sources of energy and have gotten used to cheap energy prices. This assumption is now built deep into the structure of our society, so that, for example, the average American worker drives 22 to 30 miles (35 to 48 kilometers) round-trip each day to and from work, and eight million workers drive over 70 miles (112 kilometers) each work day.⁴⁰ And because of the layout of our cities and the absence of good public transportation in many cities, many of them do not have any alternative but to drive.

Because we have multiple sources of fossil energy within easy reach, as new supplies are discovered or new recovery techniques developed, energy prices can change dramatically. For example, in the last few years, the expectation of low natural gas prices from the huge new shale gas supplies in the United States has caused a number of developers who were making big investments in wind projects to delay or pull the plug on those projects.⁴¹ Some even believe that North America will eventually become a net exporter

of energy because of the shale gas and unconventional oil booms.⁴² Did the huge new supplies of shale gas just happen along at this point in history by good luck, or did lateral drilling and fracking technology develop in response to increased demand for energy, as some experts believe?⁴³

B. Free Market Ideology as an Impediment to a National Renewable Energy Policy

The second cultural factor is that we have a very strong *free market ideology* in the United States. Perhaps it is even stronger here than in most countries in Europe. Many of our leading conservative think tanks in the United States, such as the Cato Institute, the Heritage Foundation, and the American Enterprise Institute, are attacking the concept of government promoting green energy and a green energy future.⁴⁴ It is not so much that they are opposed to renewable energy per se, but rather to the heavy hand of government to mandate it. But it is an interesting anomaly that conservatives in Europe generally support renewable energy,⁴⁵ but conservatives in the United States generally oppose it.

A good example is an article that appeared by two senior fellows at Cato, Jerry Taylor and Peter Van Doren, in *Forbes*, an influential business magazine. They wrote "renewable energy is quite literally the energy of yesterday."⁴⁶ (Actually they claimed it was "the energy of the 13th Century"⁴⁷ to be exact.)

If green energy is so inevitable and such a great investment why do we need to subsidize it? . . . If and when renewable energy makes economic sense, profit hungry investors will build all that we need without government needing to lift a finger. But if it doesn't make economic sense, all of the subsidies in the world won't change that fact.⁴⁸

In addition, our electricity system is dominated by private ownership of electric utilities, and some of them, along with some oil and coal companies, are a powerful lobbying force against fundamental changes in our current energy structure.

34. *Chu Backpedals on Call for Higher Gas Prices*, FOX NEWS (Mar. 13, 2012), <http://www.foxnews.com/politics/2012/03/13/Chu-Backpedals-On-Call-For-Higher-Gas-Prices/#ixzz2h6qiocong> (last visited Jan. 5, 2013).

35. For the sources and consequences of this expectation, see generally GRAETZ, *supra* note 4.

36. See *Natural Resources: When Blessings Become Curses*, in THE WORLD BANK, ECONOMIC GROWTH IN THE 1990s: LEARNING FROM A DECADE OF REFORM 308-11, available at http://www1.worldbank.org/prem/lessons1990s/chaps/Ctrynote7_AreNaturalResources.pdf.

37. DANIEL YERGEN, THE PRIZE 160-63 (1991).

38. Top World Oil Producers, Exporters, Consumers, and Importers, 2006, <http://www.infoplease.com/ipa/A0922041.html> (last visited Jan. 3, 2013). In 2012, U.S. production rose to over 6.4 million barrels a day. *U.S. Oil Production Rise is Fastest Ever*, WALL ST. J., Jan. 18, 2013, at <http://online.wsj.com/article/SB10001424127887323468604578249621718888086.html?KEYWORDS=record+US+oil+production>.

39. U.S. Energy Information Administration, Petroleum Statistics (2009 data), http://www.eia.gov/energyexplained/index.cfm?page=oil_home#tab2 (last visited Jan. 3, 2013).

40. U.S. DEPT. OF TRANSPORTATION, RESEARCH AND INNOVATIVE TECHNOLOGY ADMINISTRATION BUREAU OF TRANSPORTATION STATISTICS, 3 OMNISTATS (Oct. 2003) Figure 2—On a Typical Day, How Many Miles One-Way Do You Travel From Home to Work?, http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/omnistats/volume_03_issue_04/html/figure_02.html (last visited Jan. 5, 2013).

41. Keith Johnson, *Ill Winds Blow for Clean Energy: Cheap, and Abundant, Natural Gas Diminishes Alternative Projects' Appeal*, WALL ST. J., July 9, 2009, <http://online.wsj.com/article/SB124710043333415571.html> (last visited Jan. 3, 2013).

42. *Exxon Sees N. America Becoming Net Energy Exporter by 2025 Thanks to Surge in Oil, Gas Output*, WASH. POST, ec. 11, 2012.

43. David Deming, *Are We Running Out of Oil?*, National Center for Policy Analysis Policy Backgrounder No. 159 (Jan. 29, 2003), available at <http://www.ncpa.org/pdfs/bg159.pdf> ("We have not run out of oil because new technologies increase the amount of recoverable oil, and market prices—which signal scarcity—encourage new exploration and development.").

44. ANDREW P. MORRIS ET AL., THE FALSE PROMISE OF GREEN ENERGY (Cato Inst., 2011), <http://www.cato.org/store/books/false-promise-green-energy> (last visited Jan. 3, 2013).

45. See, e.g., Where We Stand: Climate Change and Energy Policy, CONSERVATIVES.COM, http://www.conservatives.com/Policy/Where_we_stand/Climate_Change_and_Energy.aspx ("We are committed to optimising energy from renewable sources.").

46. Jerry Taylor & Peter Van Doren, *The Green Energy Economy Reconsidered*, FORBES, Mar. 29, 2011, <http://www.forbes.com/2011/03/28/green-energy-economics-opinions-jerry-taylor-peter-van-doren.html> (last visited Jan. 3, 2013).

47. *Id.*

48. *Id.*

C. Less Concern About Climate Change as Impediment to a National Renewable Energy Policy

There is also less concern about global climate change in the United States than there is in Europe. When they talk about the reasons for renewable energy, Europeans tend to mention global climate change first and energy security second. In the United States, it is generally the other way around. A Gallup poll in March 2011 said that global climate change was the *lowest* concern among environmental issues among Americans.⁴⁹ They ranked every other environmental problem higher than they ranked global climate change. And only 51% of Americans regarded global climate change as a “serious problem.”⁵⁰ That is not enough to legislate. Our political structure was set up so that one could only legislate if there was a strong consensus.

* * * *

To sum up, let me quote the *New York Times*, which wrote in August 2010:

If the United States is to catch up to countries like Portugal, the United States must overcome obstacles like a fragmented, outdated energy grid poorly suited to renewable energy, a historic reliance on plentiful and cheap supplies of fossil fuels, especially coal, powerful oil and coal industries that often oppose incentives for renewable development and an energy policy that is influenced by individual states.⁵¹

The “catch-up” metaphor, while so common that we hardly notice it, is freighted: even if the world as a whole were to make a serious commitment to renewable energy, it does not necessarily follow that every country should get the same percentage of its energy from renewable sources. The central idea behind free trade going back to Adam Smith is the claim (still controversial in some quarters) that all are better off if various countries take advantage of their diverse natural endowments.⁵² Thus, one might expect a country such as the United States that has huge resources of several different fossil fuels to obtain less of its energy from renewable sources than countries that lack comparable sources of energy. Said differently, if you are Norway (or the Pacific Northwest in the United States), it doesn’t take a genius to figure out that hydro, despite its drawbacks, is a relatively attractive source of energy, but that doesn’t make that particular energy source equally attractive for Saudi Arabia.

IV. A Defense of the American Approach

After portraying this pessimistic picture about the prospects for a national renewable energy policy in the United States, let me try to make a brief, partial defense of the American approach. Admittedly, the U.S. system of government is not good at government-led transformations of the economy, such as mobilizing trillions of dollars of capital to remake our energy infrastructure—at least unless there is a really strong and sustained popular consensus as we had around environmental issues in the 1970s and 80s. Our Framers intended it that way. The goal of our structure is to prevent government from leading us into misadventures. Our Framers seemed to believe that it was better for government not to act decisively than to act wrongly. Many Americans think that the government isn’t all that smart. They are more concerned about government picking and subsidizing losers than about missing the boat because we don’t have a strong centralized energy policy. Thus, our current renewable energy policy is not to have a single national policy, but to allow states and private companies to experiment with different approaches and ultimately to let the market decide what works best in the light of experience.⁵³

There are some theoretical justifications for the conservative position that the best national renewable energy policy may be not to have a single national one but a diversity of policies at the state level and among private investors who are playing different strategies. This cautious approach can be seen as a version of what is called the “maxmin” strategy in game theory.⁵⁴ If you’re a risk-adverse player, or if you think you’re not very smart, the best way to play the game may be to try to ameliorate the worst possible outcome by cutting your losses. In other words, try to avoid being totally and disastrously wrong. Hedge your bets; invest some in renewable energy, don’t invest too much in something that may turn out to be wrong.

This strategy is closely akin to what is called “portfolio theory” in economics, diversifying and investing in multiple approaches,⁵⁵ as opposed to putting 45% of your

49. Gallup Politics, Water Issues Worry Americans Most, Global Warming Least, GALLUP.COM, <http://www.gallup.com/poll/146810/water-issues-worry-americans-global-warming-least.aspx> (last visited Jan. 3, 2013).

50. *Id.*

51. Rosenthal, *supra* note 2.

52. See generally Alan S. Blinder, *Free Trade*, in THE CONCISE CYCLOPEDIA OF ECONOMICS (ed. David R. Henderson), <http://www.econlib.org/library/Enc/FreeTrade.html>; MATT RIDLEY, THE RATIONAL OPTIMIST: HOW PROSPERITY EVOLVES (2010).

53. The great fallacy in our current “let the market decide” approach is that we already have significant government subsidies that distort the competition. See generally ELI, ESTIMATING U.S. GOVERNMENT SUBSIDIES TO ENERGY SOURCES: 2002-2008 (2009), available at http://www.eli.org/Program_Areas/innovation_governance_energy.cfm. Prof. Michael J. Graetz attributes many of the problems in U.S. energy policy to the seeming inability of our political system to impose taxes rather than subsidies. GRAETZ, *supra* note 4, at 179-95. The distorting effect of subsidies has led one of our political figures to call for the elimination of all energy subsidies. Dan Berman & Dan Hirschhorn, *Sarah Palin Calls to Eliminate Energy Subsidies*, POLITICO.COM, May 3, 2011, <http://www.politico.com/news/stories/0511/55970.html> (last visited Jan. 3, 2013). See also RICHARD H.K. VIETOR, ENERGY POLICY IN AMERICA SINCE 1945: A STUDY OF BUSINESS-GOVERNMENT RELATIONS (Cambridge 1984). The most significant subsidy is, of course, the externalities from the harms caused by pollution that are not reflected in market prices. NATIONAL RESEARCH COUNCIL, HIDDEN COSTS OF ENERGY: UNPRICED CONSEQUENCES OF ENERGY PRODUCTION AND USE (2009), <http://www.nap.edu/catalog/12794.html>.

54. For a quick summary, see Game Theory, QUICKMBA.COM, <http://www.quickmba.com/econ/micro/gametheory/> (last visited Jan. 3, 2013).

55. For an introduction to basic portfolio theory, see generally HARRY M. MARKOWITZ, PORTFOLIO SELECTION: EFFICIENT DIVERSIFICATION OF INVEST-

electric power into renewables as in Portugal (or 75% into nuclear power in the case of France⁵⁶). Bagehot had it right that the essence of American government is hoping that the multitude of our institutions will atone for their inferiority. And at the core, that's why we don't have an effective national renewable energy policy.

But having said that, we in the United States are still third worldwide in the amount that we invest in renewable energy.⁵⁷ And we still invest more in clean energy research and development than Europeans do on a per capita basis.⁵⁸ But, as on many other issues of social and economic policy, the United States is playing an inelegant, untidy, diverse, more laissez-faire strategy that is different from what the more centralized strategy that our brothers and sisters in Europe are pursuing. And it will be interesting to see which will end up being more successful in the long run.

Another distinguished European, Otto von Bismarck, the inventor of the modern activist welfare state, once reportedly said, with apparent frustration: "God looks after drunkards, fools, and the United States of America."⁵⁹

Bismarck just couldn't understand how we misguided and misgoverned Americans manage to do as well as we do without an enlightened Prussian bureaucracy to guide us properly. With all due respect to Bismarck, it may not be that God looks out for the United States after all. It may be that the United States typically follows inelegant, muddled, untidy, but diversified strategies that are never right, but also never end up being totally wrong.

The defining feature of the relationship between human beings and the environment is that we can foresee the consequences of our actions for future generations and the planet and therefore we have moral responsibilities to try to manage the effects of our actions. But the accompanying paradox is that while it is in our nature to envision the future, we are not very good at predicting it.⁶⁰ Was God looking after the United States when the shale gas boom just happened serendipitously at this particular point in history when we needed it, as Bismarck imagined? Maybe Bagehot had it right instead: Multiplicity atones for inferiority.

MENTS 4-8 (19). For a discussion of the value of a portfolio approach in energy policy, see Michael Grubb et al., *Diversity and Security in U.K. Electricity Generation: The Influence of Low-Carbon Objectives*, 34 ENERGY POL'Y 4050 (2005).

56. World Nuclear Association, Nuclear Power in France, <http://www.world-nuclear.org/info/inf40.html> (last visited Jan. 3, 2013).

57. Timothy Gardner, *U.S. Drops to 3rd in Clean-Energy Investment: Pew*, REUTERS.COM, Mar. 29, 2011, <http://www.reuters.com/article/2011/03/29/us-renewables-report-pew-idUSTRE72S0T620110329> (last visited Jan. 7, 2013).

58. Paul Klemperer, What Is the Top Priority on Climate Change?, VOXEU.ORG (Dec. 13, 2007), <http://www.voxeu.org/index.php?q=node/803> (last visited Jan. 7, 2013).

59. SAMUEL ELIOT MORISON, *THE OXFORD HISTORY OF THE UNITED STATES 1783-1917* 413 (1927), *quoted* http://en.wikiquote.org/wiki/Talk:Otto_von_Bismarck.

60. See E. Donald Elliott, *The Tragi-Comedy of the Commons: Evolutionary Biology, Economics and Environmental Law*, 20 VA. ENVTL. L.J. 17 (2001), available at <http://ssrn.com/abstract=1709979> (explaining why some societies manage environmental problems successfully and others do not in part by failures of foresight). Compare F.A. HAYEK, *THE FATAL CONCEIT: THE ERRORS OF SOCIALISM* 66-88 (W.W. Bartley ed., 1988) (arguing government cannot acquire and process enough information to manage a complex reality).