

# ELR

## NEWS & ANALYSIS

### Using Economics to Fuel Responsible Energy Consumption Decisions

by W. Kip Viscusi

Examining individual consumption behavior is pertinent to both the current sources of greenhouse gas (GHG) emissions as well as policies designed to limit these emissions.<sup>1</sup> A wide variety of private household decisions generate externalities that have environmental ramifications both now and in the future. Because household decisions may not be fully aligned with broader societal objectives, improving these decisions could foster society's environmental policy objectives.<sup>2</sup> If, however, it were always as inexpensive to reduce pollution after the fact using the analog of end-of-pipe treatment, then there would be no need to alter consumption behavior, as it would be no more costly to address the harm after it has occurred.

This Article considers the determinants of individual consumption decisions and how these decisions might better account for environmental impacts. In addition to exploiting the quite direct forms of regulatory incentives to alter behavior, such as taxes and regulatory standards, policymakers should take advantage of the potential of informational remedies that can assist people in making more efficient choices for themselves and more responsible decisions for the environment. This Article considers as a case study ways in which current information provisions for household energy utilization might be improved. In exploring the potential role of more environmentally responsible consumption decisions, I do not mean to imply that such policies alone are sufficient to fully address all climate change problems. However, to the extent that substantial benefits can be generated at little cost, consumption-oriented efforts should be included in a broad mix of climate change initiatives.

#### I. How Might Private Decisions Fall Short?

A useful starting point is to examine what drives consumption behavior. For concreteness, I will usually refer to the household as the decisionmaking unit. Economists' usual assumption is that people set out to maximize their expected

welfare, or utility, as they perceive it, where this formulation takes into account current and future effects, appropriately discounted to put them in comparable terms.<sup>3</sup> Thus, the perceived personal benefits and costs of energy usage matter. People also may care about the harm to environmental quality, so the fact that people behave in this self-interested fashion does not imply that they do not take into account the broader implications of their actions. Similarly, people may be very much concerned with the effects on future generations and, as with effects on themselves, these impacts will be discounted to bring them back to present value.

While households may take actions to fully recognize the harm their behavior inflicts on the environment, there is no internal accounting system to ensure that this is the case. Monthly utility bills alert recipients to the amount of usage and its monetary costs. If households are using too much energy for their budget, they will be forced to cut back. But there is no comparable automatic feedback mechanism for environmental harm. What is the social cost of excessive energy use and a large carbon footprint? Even if people are apprised of the environmental damage, there is no budgetary discipline as in the case of monetary costs. Bottle deposits are a notable exception in which there is a type of user fee for environmental harm.<sup>4</sup>

As a result, people may not understand the socially efficient level of energy usage based on their observation of the private benefits and costs. Indeed, they may make errors even from the standpoint of understanding their private costs. Recognizing some of these errors is a first step toward developing an effective policy remedy.

#### II. Discounting and Time Horizon Effects

Today's consumption behavior with respect to GHG emissions may not have apparent effects on environmental quality for decades, but may well be influential a century from now.<sup>5</sup> The intrinsic involvement of very long time dimen-

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1. These are not new observations. See, e.g., Michael P. Vandenbergh, *The Individual as Polluter*, 35 ELR 10723 (Nov. 2005).
2. For a different economic perspective that is quite consistent with the views expressed herein, see Mark A. Cohen, *Individual and Household Environmental Behavior: What Does Economics Contribute to the Discussion?* 35 ELR 10754 (Nov. 2005).

3. Thus, for example, if a person uses a 3% rate of interest in discounting future effects, the present value of \$1 a year from now is \$1/1.03, or \$0.97, and the value of \$1 50 years from now is \$1/(1.03)<sup>50</sup> or \$0.22.

4. Recycling behavior is discussed at length in DON FULLERTON & THOMAS C. KINNAMAN, *THE ECONOMICS OF HOUSEHOLD GARBAGE AND RECYCLING BEHAVIOR* (2002).

5. Here I will take as given that there are demonstrable risks of climate change and that they are long-term hazards requiring substantial reductions in GHGs. For different economic perspectives on the over-

sions with respect to climate change policies challenges policymakers seeking support for environmental policies, and also impedes efforts to foster individual behavior that accounts for the longer term implications of the behavior.

Age is a key determinant. The private benefits of climate change policies diminish with age because older people have a shorter time horizon. With less remaining future expected lifetime, the trajectory of future outcomes of personal relevance will be diminished, though altruism with respect to future generations may still be operative. Analysis of responses to the large-scale Eurobarometer Survey suggests that the upper end of the population age distribution has a low interest in environmental matters.<sup>6</sup> Of those 65 and over, 7% fewer people are very well informed or fairly well informed about major global environmental problems than other age groups.<sup>7</sup> Compared to other age groups and controlling for a detailed set of demographic effects such as income and education, those age 65 and over are 5-9% less likely to be willing to pay more for gasoline to protect the environment.<sup>8</sup> This strong age effect suggests that for this age group there is a strong role of private benefit valuations rather than disinterested altruism.

The discount rates that people use in thinking about deferred effects greatly affect the weight placed on future outcomes. That there must be some discounting of future effects is clear. Among the many anomalies that can arise in a world without discounting is that a trivial natural resource loss that is worth a penny a year would impose an infinite cost.<sup>9</sup> If people do not weigh future effects less than the present, it will always be desirable to postpone spending money forever if there is a positive rate of interest that it could earn in the interim. The key question is what the weight on future effects should be.

To illustrate the potential significance of the choice of the discount rate, consider effects 100 years from now. The two discount rates recommended by the U.S. Office of Management and Budget (OMB) for U.S. regulatory policy assessment are 3% and 7%.<sup>10</sup> The present value of \$1 in benefits in 100 years is \$0.052 at a 3% rate and only \$0.001 at a 7% rate. A 4% swing in the discount rate doesn't affect the present value of benefits by 4% but instead reduces them by a factor of about 50, reflecting the centrality of discount rates in cli-

mate change benefit assessments. Clearly, of the two discount rates, 3% is more favorable to calculating larger future environmental benefits than is the 7% rate. It is also more in line with the real rate of return in the U.S. economy.<sup>11</sup> While the 3% rate is also in line with the rates used by some economists who have been active in the climate change debate, others favor a lower rate such as 1% based on intergenerational equity concerns.<sup>12</sup> At a 1% rate, the present value of \$1 received 100 years from now is \$0.370, which is much more favorable than the 3% rate.

The debates over the appropriate discount rate to be used for environmental policies will continue to rage, but there are also key roles of discounting with respect to individual consumption decisions. Here I will focus on two anomalies—temporal myopia and hyperbolic discounting.<sup>13</sup> By temporal myopia, I mean that people will generally use a rate of interest that is consistently too high when discounting future effects. With hyperbolic discounting, people use a high rate of interest for the first year, but thereafter have reasonable discount rates. Although hyperbolic discounting has attracted substantial interest as a theoretical curiosity, for the very long-term decisions involving climate change issues, the consistently high discount rates of temporal myopia are more problematic.

The difficulties posed by temporal myopia are apparent when considering how people weigh energy efficiency savings for appliances. Evidence based on consumer behavior indicates that people use a discount rate of over 30% in weighing future energy cost savings.<sup>14</sup> At that rate, \$1 saved next year is worth \$0.77, \$1 saved 5 years from now is worth \$0.27, and \$1 of climate change benefits in 50 years has negligible value of 2 millionths of \$1. If, however, people exhibit hyperbolic discounting with an initial discount rate of 30% followed by a 3% rate, then \$1 saved next year is worth \$0.77, \$1 saved 5 years from now is worth \$0.68, and \$1 of climate change benefits in 50 years has a value of \$0.18. The difference between hyperbolic discounting and a consistent pattern of temporal myopia is whether long-term environmental effects will have a partially diminished value or will effectively be eliminated from consideration.

For consumption decisions with a shorter time horizon and environmental policies with nearer term payoffs, the immediate distortions of hyperbolic discounting can be influential. With respect to the valuation of water quality improvements, my colleagues and I found that those who use lakes, rivers, and streams displayed evidence of hyperbolic discounting, starting with initial high rates of discount of 11% that immediately dropped to one-half that amount.<sup>15</sup> In contrast, those who do not use lakes, rivers, and streams for

all level of the risks and their consequences, see NICHOLAS H. STERN, *THE STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE* (2006); William Nordhaus, *A Review of the Stern Review on the Economics of Climate Change*, 45 J. ECON. LITERATURE 686 (2007); and Martin L. Weitzman, *A Review of the Stern Review on the Economics of Climate Change*, 45 J. ECON. LITERATURE 703 (2007).

6. The European experience is instructive because these are developed countries, as is the United States, and the data on European environmental attitudes is much richer than that for the United States. One would expect age-related patterns to be common across different countries to the extent that time horizon effects are most instrumental.

7. These data are drawn from Table II of Joni Hersch & W. Kip Viscusi, *The Generational Divide in Support for Environmental Policies: European Evidence*, 77 CLIMATIC CHANGE 127 (2006). The sample they examine consists of over 14,000 respondents.

8. *Id.* at 129.

9. For a review of these and other anomalies from failure to discount, see W. Kip Viscusi, *Rational Discounting for Regulatory Analysis*, 74 U. CHI. L. REV. 209 (2007).

10. OMB, CIRCULAR NO. A-4, REGULATORY ANALYSIS (2003), available at <http://www.whitehouse.gov/OMB/Circulars/a004/a-4.pdf>.

11. Indeed, it was an analysis of the opportunity cost of capital that led the OMB to add a 3% rate to the discount rate recommendations, which formerly had been limited to 7%. *Id.*

12. For a review of the different discount rates used by various analysts and advocacy of a low rate of discount, see Partha Dasgupta, *Discounting Climate Change*, J. RISK & UNCERTAINTY DOI 10.1007/s11166-008-9049-6 (forthcoming 2008).

13. For a discussion of these and other discounting anomalies, see Shane Frederick et al., *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LITERATURE 351 (2002).

14. Jerry A. Hausman, *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables*, 10 BELL J. ECON. 33 (1979).

15. W. Kip Viscusi et al., *Estimating Discount Rates for Environmental Quality From Utility-Based Choice Experiments*, J. RISK & UNCERTAINTY DOI 10.1007/s11166-008-9045-x. (forthcoming 2008).

recreational purposes have consistently high discount rates of 17-23% for all periods, consistent with my temporal myopia characterization.<sup>16</sup> Put somewhat differently, for these data, those who place a very low value on the environment also care little about the future consequences.

People place too low a weight on future environmental consequences. Thus, even if they personally value environmental quality, long-term effects will not be recognized to a sufficient extent if people place an irrationally low weight on future effects. Overcoming this irrationality remains a main policy challenge.

### III. Pricing Environmental Externalities

A standard economic solution to getting people to behave in a socially efficient manner is to establish financial incentives for them to do so. Drivers who exceed highway speed limits risk penalties, and poor performance at work leads to lower wages and possible dismissal. Raising the dollar price for energy to reflect the full social cost of energy usage similarly establishes financial incentives for proper behavior even if people discount the future too heavily. It is a quite direct way to put environmental externalities on the same footing as the direct financial costs of energy supply. Households will then have to decide whether their energy usage provides sufficient private benefits to them to outweigh the full social cost of their actions. In effect, full social cost energy pricing transforms the private decision into a social benefit-cost calculus: Is their willingness to pay for the energy greater than the full social costs the energy usage causes?

The full social cost of energy can be broken down into three components: (1) the private financial costs of the energy including taxes currently imposed; (2) the externalities other than GHG emissions; and (3) the cost of GHG emissions. In a previous study, my colleagues and I developed estimates of the environmental costs other than GHG emissions to assess which energy sources are underpriced and which are not, given current tax levels.<sup>17</sup> Gasoline, the most visible target for government regulation, is priced relatively appropriately from the standpoint of environmental effects other than GHG emissions. There is no need for either a gas-tax holiday or a big increase in gasoline prices if GHG emissions are not factored into the analysis. What this result also implies is that gasoline prices should be boosted by the per gallon GHG cost of gasoline.

Matters are much bleaker for other energy sources that do not dominate public debates because their current tax levels are not sufficiently great to bring the prices in line with their full social cost, excluding GHG costs. Wholly apart from climate change effects, aircraft fuel and the comparatively clean energy source, natural gas, are slightly undertaxed. Diesel fuel, heating oil, and coal are significantly undertaxed, with coal being by far the worst offender. A final energy source, wood, may have the redeeming feature of being a renewable resource, but it is a highly undertaxed pollutant. The principal candidates for additional taxation even without accounting for GHG effects are diesel fuel, heating oil,

coal, and wood. If these energy sources had prices more in line with their conventional pollution costs, the demand for these products would decline, fostering GHG reductions.

Nevertheless, to achieve the proper recognition of the environmental costs of energy usage, policies must also address the GHG implications. Higher energy taxes face three potential political obstacles: (1) with previous public resistance to an extra 5 cent per gallon gas tax during the William J. Clinton Administration, the general willingness to pay higher energy prices is not great; (2) given the current rise in energy prices, particularly for gasoline, the resistance to further increases in the price is likely to be especially great; and (3) the possibility of energy costs causing economic hardships for the poor raises equity concerns.

Perhaps in part because of the political realities of using pricing mechanisms, substantial emphasis has been placed on standards policies, such as Corporate Average Fuel Economy standards. Standards often have appeal to environmentalists in that they appear to be a more direct attack on pollution, and firms are not able to “buy their way out” of inflicting harm. However, in reality they are a weaker policy instrument. With standards, polluters are able to pollute up to some limit—the value of the environmental standard—for free.<sup>18</sup> However, fines and taxes charge polluters for every unit of pollution. Properly set fines can generate the same level of pollution control as standards, but with the additional benefit that firms will have to pay for all the pollution that they generate. Because firms are charged for all pollution, even that below the regulatory standard, pollution taxes will lead firms to bear the full social costs of their energy usage, creating more appropriate incentives for entry of firms into the industry. A political disadvantage of fines and penalties is that they will impose greater costs on firms than do comparable standards. The principal constituency for the price mechanism may be professional economists rather than regulated businesses or environmentalists.

### IV. Principles for Using Informational Approaches to Regulation

Exploiting the potential for informational regulation policies may be more effective than both taxes and standards, which may generate political resistance that may limit the potential role of these policies. Informational policies have three roles to play. First, information can improve private decisions by, for example, making people aware of financial savings associated with energy-efficient appliances. Second, information may make people aware of the consequences of their consumption decisions for the environment, which they would value if they knew that their consumption had such impacts. Third, information may alter the weight that people place on the environment by, in effect, making them different people with a higher valuation of environmental quality.

Whether information can play a constructive role at all requires that the information actually be informative. Reminders or attempts to browbeat consumers into

16. *Id.*

17. The discussion in this paragraph and the following paragraph is based on Figure 1 in W. Kip Viscusi et al., *Environmentally Responsible Energy Pricing*, 15 ENERGY J. 34 (1994).

18. A discussion of the different effect of pollution taxes as compared to standards appears in W. KIP VISCUSI ET AL., *THE ECONOMICS OF REGULATION AND ANTITRUST* 763-64 (4th ed. 2005). Environmental textbooks likewise discuss taxes and various financial incentive approaches. See, e.g., CLIFFORD S. RUSSELL, *APPLYING ECONOMICS TO THE ENVIRONMENT* (2001).



changing their behavior have not proven effective.<sup>19</sup> In contrast, information that provides new knowledge can foster improved behavior.<sup>20</sup>

If designing effective informational interventions were just a matter of transmitting substantive content, then the task would be quite simple. For climate change, we might simply send people copies of the Stern report and assume that they will read it and consequently be energized to undertake appropriate energy-saving actions.<sup>21</sup> Unfortunately, matters are not that simple, as a variety of factors affect the efficacy of information programs.

First, people must receive and process information. If they never get relevant information or don't read it, then there will not be any beneficial effect. Utility bills frequently include inserts, some of which involve money- or energy-saving tips. If consumers never look at these inserts and simply toss them away unread, then there will be no effect of this informational intervention.

Second, the content of the information matters. The message should contain whatever information we wish to convey, whether it pertains to specific actions that the person could take or alerting the person to environmental dangers generally.

Third, the structure and format of the information provided matter. How information is presented and organized can determine whether the information is read and processed.

Fourth, the amount of information presented will affect whether any of it is read and processed. Within the context of hazard warnings, there is a danger of label clutter. Providing too much information within a single label can obscure the primary message. More detail, particularly if it is extraneous to the main intent of the warning, will impede people's ability to process the warning message. Closely related to label clutter is the problem of information overload. Providing too much information about the particular decision will not foster improved decisions, as people can only process four to five pieces of information reliably.<sup>22</sup>

Fifth, the efficacy of the message for any given product and activity will depend on the amount of information being provided with respect to other choices. Suppose, for example, that all products are labeled hazardous or dangerous to the environment. In that situation, the consumer obtains no real benefit from the information because it does not promote better decisions, but simply stigmatizes all choices. By targeting informational efforts, these problems of uninformative blanket warnings can be avoided.

Sixth, the warnings messages must be consistent with the established information vocabulary. There are a variety of human hazard signal words that are commonly used, such as

Caution, Warning, Danger, and Flammable.<sup>23</sup> For each of these and related warnings language components, there are often well-established norms with respect to their proper usage. Using an excessively shrill warning not only will mislead consumers, but also will dilute the usage of this language for more serious risks that merit the warning.

Seventh, the warning must be credible. Lying to consumers about the magnitude of the risk or the efficacy of precautionary behavior ultimately will undermine the credibility of the warnings effort. As a consequence, consumers will dismiss these warnings and may also have little confidence in other such statements.

Eighth, the purpose of warnings and other information is to enable people to make informed decisions. The objective is not to change behavior per se. For those who are already undertaking consumption decisions that reflect appropriate levels of regard for the private costs and the social consequences of their actions, there is no need to alter behavior. However, for people who are undertaking too few precautionary actions, either because they underestimate the private benefits or ignore the effects of their behavior on the environment, information should lead them to make better choices that are more in line with the full social costs and benefits of their actions. If nobody changes behavior as a result of the informational effort, then there is little reason to undertake such a policy unless it is designed to serve a reassuring function.

Informational policies have a broad role to play, not only with respect to explicit behaviors such as safety precautions, but also in terms of sensitizing people to the importance of environmental problems. In effect, information may be able to make the recipients of the information different people by increasing the weight that they place on environmental quality. Evidence from the Eurobarometer survey is consistent with such a transformative role, as people who have acquired information about global environmental problems are more likely to support higher gasoline prices to protect the environment.<sup>24</sup> Causality is often difficult to sort out, as people who care more about the environment may seek out the information, and more information may make people care more about the environment. However, there seems to be an influential role of information as the effect of information on environmental program support holds true even after including a wide variety of controls for education, demographic factors, country, and the person's perception of climate change risks.<sup>25</sup>

## V. An Energy Bill Application of Information Guidelines

The way in which these principles can assist in the design of environmental information efforts can be illustrated using the natural gas bills from two different companies. Both

19. Robert S. Adler & David Pittle, *Cajolery or Command: Are Education Campaigns an Adequate Substitute for Regulation?*, 2 YALE J. ON REG. 159 (1984).

20. For review of information policies and documentation of their potential efficacy, see W. KIP VISCUSI & WESLEY A. MAGAT, *LEARNING ABOUT RISK: CONSUMER AND WORKER RESPONSES TO HAZARD INFORMATION* (1987) and WESLEY A. MAGAT & W. KIP VISCUSI, *INFORMATIONAL APPROACHES TO REGULATION* (1992). The principles for providing information are also drawn largely from these books.

21. See STERN, *supra* note 5.

22. These limits are examined in James R. Bettman et al., *Cognitive Considerations in Presenting Risk Information*, in VISCUSI & MAGAT, *supra* note 20, at 19-25.

23. The American National Standards Institute (ANSI) publishes generally used guidelines for hazard warnings of various types in different contexts.

24. See Hersch & Viscusi, *supra* note 7, at 131, 133.

25. In particular, the regression models reported include a series of up to 46 explanatory variables pertaining to personal characteristics, country, different sources of information on environmental issues, how well the respondent is informed about environmental problems, perceptions of risks of global warming and climate change, and whether the respondent checks automobile emissions. See *id.* tbl. IV, at 130-32.

bills have three panels. The bottom panel presents the amount due and payment information. The bills are two-sided, but the back side will not be discussed below as it is less prominent and provides relatively low-priority information such as phone numbers and explanations of terms. The first bill I consider is from Atmos Energy, which operates in the West and is the largest natural gas-only utility in the United States.<sup>26</sup> The top panel presents customer information on the top, usage statistics and billing information lower and on the right, and a bar chart on the left that depicts usage “this month,” “last month,” and “last year,” by which the utility presumably means this month last year. Other than the bar chart and the meter reading this month and last month, there is no additional information about energy usage. The middle panel mentions that there is an enclosed brochure on how to save money on energy usage, gives instructions for the number to call if you smell gas, lists the total amount due, and leaves more than half the entire panel blank.

The Piedmont Natural Gas Company, which operates in the Southeast, likewise presents account information on the right side of the top panel, with the amount due on the right side of the second panel.<sup>27</sup> The left section of the top panel and part of the middle panel are devoted to monthly usage for the past 13 months. The middle panel also includes a table on the left side that compares energy usage this month and the comparable month a year ago, along with information on average temperatures in those months. The bottom of the middle panel consists of meter reading information.

It is useful to consider these bills in light of the principles for effective information provision. The bills will be received by the customer in each instance, and in the case of households that pay their bills by mail, they will read at least the amount due part of the bill. However, with the increasing popularity of automatic drafting of the customer’s checking account or charge account, people may not review their bills with the same care.

Both bills have fairly similar content, are not excessively cluttered, are credible, and provide information that does not violate the norms for warnings vocabulary. But the structure of the information presented is quite different. Whether a bar chart showing the last 13 months of energy usage (Piedmont Natural Gas) or the selected three months bar chart that highlights changes with respect to last month and last year (Atmos Energy) is more effective is unclear *a priori*. The quantitative information provided by Piedmont Natural Gas pertaining to the 12 comparisons of monthly temperatures, energy usage, and dollar cost is a nice additional feature of the bill and is absent from the Atmos Energy bill.

It is clearly possible to improve the efficacy of this information. First, because of the different formats for the bar charts and presentation of quantitative information, there should be experimental tests to ascertain the most effective

presentation structure for this information. Second, a standardized energy usage information structure should be established across different energy sources so that people will be able to receive and process information quickly for their different utilities. An electric utility counterpart of Atmos Energy is Yampa Valley Electric, but whereas the natural gas usage information is a bar chart with three bars on the left side of the top panel, the usage history for electricity is a 13-month bar chart on the top right panel.<sup>28</sup> Middle Tennessee Electric adopts a 13-month bar chart in the top right panel, as compared to the 13-month chart on the left side of the panel, but fails to include the detailed monthly usage comparisons from the natural gas bill.<sup>29</sup> Notably, all four of the bar charts used have a different visual appearance, and make different use of color, shadings, and dimensions. Symmetry in the provision of information will assist consumers as they seek to process it. Third, the additional text of all these bills is abstract and bears no relationship to the customer’s actual energy usage. If, for example, the bill highlighted that the household is using more energy than it was at a comparable period last year, emphasizing that they will incur a financial loss, this will be a potentially powerful message given people’s aversion to losses.<sup>30</sup> An increase in usage might also trigger including a flyer with guidelines for energy reduction. Finally, it will become increasingly important to ensure that people are actually monitoring their energy usage. This could be done by providing a modest rebate for completing a survey that shows that they read and processed the information.

## VI. Conclusion

By any standard, addressing the risks of climate change is a daunting task. The extent of the challenge will require that policymakers exploit a wide variety of policy tools, possibly including some controversial components such as nuclear power, with its attendant risks and policies that may have uncertain effects on the atmosphere and climate change. Among the potentially promising options is the use of solar radiation management, which has recently been advocated by a prominent U.S. Environmental Protection Agency economist.<sup>31</sup> In addition to these ambitious policy options, policies that engage consumers in environmentally responsible behavior should remain a key component of our policy mix. With the aid of a well-designed information program or the additional incentives provided by taxes or regulatory standards, we will be able to foster more responsible consumption decisions that will reduce the extent of the GHG problems that must be addressed.

28. The company’s website is <http://www.yvea.com>.

29. The Internet site for Middle Tennessee Electric is <http://www.mtemc.com>.

30. Discussion of the importance of loss aversion appears in AMOS TVERSKY, PREFERENCES, BELIEF, AND SIMILARITY 599 (2004).

31. See the detailed advocacy of this approach as well as a critical assessment of the inadequacy of other climate change policies in Alan Carlin, *Why a Different Approach Is Required if Global Climate Change Is to Be Controlled Efficiently or Even at All*, 32 WM. & MARY ENVTL. L. & POL’Y REV. 685 (2008).

26. For additional information about the company, see <http://atmosenergy.com>. The bill discussed here is the July 2008 bill.

27. For background on the company, see <http://www.piedmontng.com>. The bill discussed here is for June 2008.