

# The Politics of Carbon Dioxide Emissions Reduction: The Role of Pluralism in Shaping the Climate Change Technology Initiative

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## I.

### INTRODUCTION

Slowly and surely the earth is warming. The increase in heat is due in substantial part to the increasing rate of release of greenhouse gasses – carbon dioxide primarily — into the atmosphere by human activity.<sup>1</sup> Of these activities, the burning of fossil fuels is the primary contributor to carbon emissions.<sup>2</sup> For the United States a reduction in energy usage, or a radical change in the methods used to generate energy, is necessary to effect a reduction in global warming.

The Proposed 1999 Fiscal Budget advocated funding for a Research Fund for America designed to support a wide range of federal science and technology activities.<sup>3</sup> The \$31 billion fund

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1. The National Science Foundation has reported that 1997, 1995, and 1990 were the three hottest years since the 1400's. Miguel Llanos, *Millenium Ending with Record Heat*, MSNBC News, ¶ 1(Apr. 22, 1998) <<http://www.msnbc.com/news/160184.asp>>.

2. The foremost nonfuel sources of carbon dioxide emissions are the destruction of natural carbon sinks (i.e. deforestation) and the manufacture of lime and portland cement (i.e. construction). Frank Muller & J. Andrew Hoerner, *Greening State Energy Taxes: Carbon Taxes for Revenue and the Environment*, 12 PACE ENVTL. L. REV. 5, 28.

3. The proposal was introduced to the general public during President Clinton's State of the Union Address (1/27/1998, 1998 WL 27367, 144 CONG. REC. H30-04,

included a five-year research and technology initiative — the Climate Change Technology Initiative (CCTI) — to reduce the Nation's emissions of greenhouse gases.<sup>4</sup> The Energy Department (DOE) and the Environmental Protection Agency (EPA) were the primary recipients and leaders under the program. The budget proposed a combined \$2.7 billion increase over five years for these and other agencies and the industries and research institutes with which they work, in order to work on projects that increase energy efficiency, generate cheaper and cleaner renewable energy sources, and improve on carbon reduction technologies.<sup>5</sup> The budget also proposed \$3.6 billion in tax incentives over five years to stimulate the adoption of more efficient technologies in buildings, industrial processes, vehicles, and power generation.<sup>6</sup> Specific examples of these incentives include: funds, administered through federal agencies, for *research and development spending* — \$277 million for researching “new generation”

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H34-H35) (“our overriding environmental challenge for tonight is the worldwide problem of climate change, global warming . . . . This past December America led the world to reach a historic agreement, committing our Nation to reduce greenhouse gas emissions through market forces, new technologies, energy efficiency. We have it in our power to act right here, right now. I propose \$6 billion in tax cuts and research and development to encourage innovation, renewable energy, fuel-efficient cars, energy-efficient homes”).

4. The fund also contains other provisions aimed at funding environmental research including the U.S. Global Change Research Program . . . . A \$1.9 billion dollar initiative administered through a number of federal agencies including Health and Human Services, NASA, Agriculture, Commerce, Interior, Smithsonian, the NSF, DOE, and the EPA. Of these agencies DOE, EPA, and the NSF are receiving the greatest increase in funding. The initiative funds the launching of satellites to monitor climate change and researchers to interpret the results of the studies in order to increase understanding of climate change and variability, atmospheric chemistry, and ecosystems. Proposed Budget of the United States, Fiscal Year 1999, Office of Management and Budget (1998) <<http://wais.access.gpo.gov>>.

5. The 1999 proposed budget includes numerous specific examples of the work which these agencies will engage in: “an example of efforts to develop breakthrough technologies to cut greenhouse gases and improve energy efficiency is the Partnership for a New Generation of Vehicles—a Government-industry effort to develop an attractive, affordable car that meets all applicable safety and environmental standards and is up to three times more fuel efficient than today's cars, reaching roughly 80 miles per gallon. The budget proposes a similar Government-industry effort to develop more efficient heavy truck engines. Other key parts of the CCTI are Government-industry partnerships on energy-efficient technologies for commercial buildings and homes; stronger labeling and efficiency requirements for appliances and office equipment; the deployment of new technologies in the industrial sector to capture waste heat and convert it into electricity; and R&D spending and incentives for renewable energy sources like biomass, wind, photovoltaics, and fuel cells.” *Supra note 4.*

6. The stated means of funding for these measures is the pending windfall from the federal suit against the tobacco companies. *Id.*

vehicles, \$100 million for research on renewable forms of energy; and tax credits, for *energy efficiency* — \$4,000/person purchasing highly fuel efficient cars, \$2,000/person for rooftop solar electricity and hot water, and \$2,000/person for home improvements which save energy.<sup>7</sup>

The budgetary allocations to various agencies for CCTI implementation are listed below:<sup>8</sup>

CLIMATE CHANGE TECHNOLOGY INITIATIVE (AGENCIES)  
(millions)

Selected Agencies	1997 Actual	1998 Estimate	1999 Proposed	Dollar Change: 1998 to 1999	Dollar Change: 1999 to 2003
Discretionary Budget Authority:					
Energy	657	729	1,060	+331	+1,899
Environmental Protection Agency	86	90	205	+115	+677
Housing and Urban Development			10	+10	+10
Agriculture			10	+10	+86
Commerce			7	+7	+38
Subtotal, budget authority	743	819	1,292	+473	+2,710
Tax Incentives			421	+421	+3,635
Total Initiative	743	819	1,713	+894	+6,345

While only a small step towards the Kyoto commitment to reduce United States carbon dioxide emission levels to 7% below 1990 levels by the year 2012<sup>9</sup>, full enactment of the CCTI would be a convincing first step towards reducing emissions.<sup>10</sup>

The decision to split these subsidies between direct expenditures to government agencies — and through these agencies to academia, think tanks, and research institutes — and tax expenditures to businesses and the populous, in part reflects the fact that

7. Infobox, *The Clinton Proposal*, 2/15/98, 1998 WL 6184031.

8. See *supra* note 5. Note that all tables are taken from the OMB web site.

9. The issue of global warming and of carbon dioxide emissions was first brought to the international political theatre five years ago when the first International Conference of the Parties on Climate Change was held. Little progress has been made in the direction of reducing global carbon emissions since. The most recent Conference of the parties resulted in the signing by developed nations of a treaty to reduce the emissions of greenhouse gas. The Clinton Administration has signed the treaty, but has made the decision not to submit the Kyoto Treaty to Congress for ratification at this time because it does not have sufficient support to be enacted into law. This decision is likely due to a mandate from both the House and the Senate that no international reduction treaty will be signed without a commitment from all countries to reduce greenhouse gasses. The Treaty signed in Kyoto only places limits on fully industrialized nations - termed Annex I nations. Bruce Clark, 3/5/98 Fin. Times 3, *Administration Upbeat on Cost of Kyoto Treaty*, 1998 WL 3537471.

10. Llanos, *supra* note 1, ¶ 2-3.

from the standpoint of administrative and economic efficiency different solutions require different implementation strategies. The split also reflects a political decision. A balancing of the interests of the populous, businesses, government officials, and other special interest groups is necessary in order to enact major legislation in a pluralistic republic. Public choice theory "conceives regulation as a service supplied to effective political interest groups" whereby these groups capture rents, economic or simply utility enhancing, from the government.<sup>11</sup> Some of these groups are best served through direct expenditure programs while other groups more easily capture tax expenditure rents. This paper seeks to enumerate the interests involved in the Climate Change Technology Initiative in order to determine what each group has at stake in return for its support of the program and to affirm the applicability of public choice theory in the case of the Climate Change Technology Initiative. The comment will conclude by taking a brief look at the state of the Climate Change Technology Initiative as of the proposed Federal Budget for fiscal year 2000.

## II.

### DISTINGUISHING TAX AND DIRECT EXPENDITURES ON ENERGY AND THE ENVIRONMENT

Attempts to regulate energy usage frequently employ a market-oriented approach. This generally means that tax incentives are used to correct what is seen as a negative externality, environmental harm, of energy usage.<sup>12</sup> The direct expenditure approach is more commonly used where monitoring of existing behavior is required. Federal direct expenditure environmental regulations are generally administered by the Environmental Protection Agency and the Department of Energy. These two types of programs represent an ideological divide between liberals and conservatives in academia and in Washington D.C. This

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11. Edward A. Zelinski, *James Madison and Public Choice at Gucci Gulch: A Procedural Defense of Tax Expenditures and Tax Institutions*, 102 *YALE L.J.* 1165, 1171 (1993).

12. Examples of such tax based regulation include: an excise tax on sales of ozone depleting chemicals; a tax on coal extracted from coal mines; Section 48 of the I.R.C. also offers small tax credits for energy-saving investments in solar and geothermal equipment; and I.R.C. 169 which allows taxpayers to depreciate certified pollution control facilities over a five-year period. See Adam Chase, *Ecotax International: Comments on Taxation for Environmental Protection: a Multinational Legal Study*, 23 *ENVTL. L.* 721, 731 (1993).

battle took its modern form in the early 1970's when then Assistant Secretary for Tax Policy in the Treasury Department and former Harvard Law Professor Stanley Surrey promulgated the concept of tax expenditures. Surrey spent a great deal of time trying to prove that the two types of spending were economically equivalent and that political considerations — hiding legislation from the public eye behind the “smoke and mirrors” of the code — were often the motive for using tax incentives rather than direct spending programs.

The analysis initiated by Surrey has evolved into two opposing modern views of the relative strengths and weaknesses of tax and direct expenditures. Two prominent participants in this controversy who hold competing perspectives are Edward Yorio and Edward A. Zelinski. As both parties agree, “the critical issue is not whether tax expenditures are occasionally inefficient, but whether in a particular case a tax expenditure would be more or less efficient than a direct subsidy in accomplishing the government's objective.”<sup>13</sup> Inefficiency, at least as a matter of implementation, is in the eye of the beholder, as the government's wasted expenditures may provide a great deal of utility to any number of special interest groups: a business man, a bureaucrat, an American laborer, or a political fanatic to name a few. For the purposes of this paper, the Climate Change Technology Initiative will be deemed inefficient where more expensive means to ends are taken in order to accommodate certain interest groups causing a fleecing of money from the Fisc.

The Surrey/Yorio school supports direct expenditures as the most proper means of policy implementation. This “perspective is firmly rooted in the tradition of the Progressive, New Deal, and good government reformers who placed great confidence in the processes and outcomes of professional decision making” by government specialists “inhabiting direct expenditure organizations [that] will more effectively scrutinize, and therefore eliminate, unwarranted spending within their respective jurisdictions than will less informed tax decision makers.”<sup>14</sup> The Zelinski theory holds that tax expenditures may be less prone to political capture (and the resulting tendency to design programs inefficiently so that special interest groups can profit) than direct expenditure programs. His theory is based on a Madisonian view

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13. Edward Yorio, *Equity, Efficiency, and the Tax Reform Act of 1986*, 55 FORDHAM L. REV. 395, 422 (1987).

14. Zelinski, *supra* note 12, at 1170.

that pluralism created by the various interest groups lobbying the government for “rents” leads to an increase in competition for government expenditures and a decrease in political “cartelization” under which interest groups could more easily influence policy-makers without close scrutiny.<sup>15</sup>

CURRENT AND PROPOSED TAX AND DIRECT EXPENDITURES ON  
ENERGY PROGRAMS

The use of tax incentives instead of direct spending to support certain private activities has been acknowledged by the federal government as a form of government expenditure and, pursuant to the Congressional Budget Act of 1974, all federal budgets now contain a special analysis entitled “Tax Expenditures” that provide a detailed compilation of all federal income tax expenditures. Tax expenditures constitute a significant percentage of government “spending”. Tax expenditures are growing as a percentage of total expenditures.<sup>16</sup> Many past tax expenditures have been targeted at energy markets. Examples of some of these expenditures include:

*Energy Supply* — Expensing of research and development costs for oil, gas and other fuels, excess of percentage over cost depletion for oil, gas, and other fuels, capital gains treatment of royalties from coal, alternative fuel production credit, alcohol fuel credit, exclusion of interest on state and local government industrial development bonds for energy production facilities, residential and alternative conservation and new technology supply incentive credits; *Energy Conservation* — Residential energy credit conservation incentives, alternative conservation and new technology credit conservation incentives, energy credit for intercity buses; *Pollution Control and Abatement* — Exclusion of interest on state and local government pollution bonds,<sup>17</sup> exclusion of pay-

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15. *Id.* at 1172.

16. *The Hidden Entitlements: Part I – An Overview of Tax Expenditures*, The Center for Tax Justice <[http://www.ctj.org/hid\\_ent/part-1/part1.htm](http://www.ctj.org/hid_ent/part-1/part1.htm)>.

17. The exclusion of interest on state and local bonds presents an interesting case study in its own right of the power that various groups – in this case high income individuals, the investment establishment, and those favoring strong state and local governments over a strong federal government – exert in bringing about legislation. The interest exemption on the bonds induces bond purchasers to buy the bonds at a lower interest rate. The state therefore has to pay out less than it normally would to get the same level of financing. The progressive rate structure makes these bonds of particularly high value to people in high income brackets. Were there enough people in these brackets to purchase all of the interest exempt bonds the state could charge a rate which would equal the market value of the bonds and the exemption would effectively be a transfer of wealth from the federal government to the state

ments in aid of construction of water, sewage, gas and electric utilities.<sup>18</sup>

Currently, federal funding in support of energy takes the form of direct expenditures, administered primarily through DOE, and tax expenditures, similar to those listed above:

FEDERAL RESOURCES IN SUPPORT OF ENERGY  
(In millions of dollars)

	1997						Estimate
	Actual	1998	1999	2000	2001	2002	2003
Spending:							
Discretionary Budget Authority	4,222	2,823	3,500	3,164	3,111	3,015	3,009
Mandatory Outlays:							
Existing law	-3,431	-2,830	-4,569	-3,280	-3,337	-3,347	-3,268
Credit Activity:							
Direct loan disbursements	1,029	1,992	1,562	1,401	1,337	1,255	1,451
Tax Expenditures:							
Existing law	1,960	1,965	1,990	2,070	2,045	2,040	1,880
Proposed legislation		-10	411	563	556	776	1,183

Many of these expenditures are aimed at protecting current (fossil and nuclear) energy resources and developing new energy resources. The CCTI would increase direct expenditure funding for alternative energy resources and would reduce certain current tax expenditures that encourage the consumption of fossil fuels<sup>19</sup> in exchange for expanded tax credits supporting the de-

government. Because there are not enough people in the high income brackets to purchase all of the state bonds the state must lower the price to induce some people in lower tier brackets to purchase some of the bonds. When this happens the people in the upper brackets receive a windfall (note that the greater the total number of bonds issued the more the price must be lowered and the greater the inequity). See generally CHIRELSTEIN, *FEDERAL INCOME TAXATION* (1996).

18. STANLEY S. SURREY AND PAUL R. MCDANIEL, *TAX EXPENDITURES* 7-24 (1985).

19. The budget sums up the current use of federal income tax incentives: "Federal tax incentives are mainly designed to encourage the domestic production or use of fossil and other fuels, and to promote the vitality of our energy industries and diversification of our domestic energy supplies. The largest incentive lets certain fuel producers cut their taxable income as their fuel resources are depleted. An income tax credit helps promote the development of certain non-conventional fuels. It applies to oil produced from shale and tar sands, gas produced from a number of unconventional sources (including coal seams), some fuels processed from wood, and steam produced from solid agricultural byproducts. Another tax provision provides a credit to producers who make alcohol fuels—mainly ethanol—from biomass materials. The law also allows a partial exemption from Federal gasoline taxes for gasolines blended with ethanol." See *supra* note 5.

velopment of traditional and alternative energy resources.<sup>20</sup> The table below displays the specific environmentally friendly tax expenditure provisions to be added under the CCTI:

EFFECT OF PROPOSALS ON RECEIPTS  
(In millions of dollars)

	Estimate						Total 1999- 2003
	1998	1999	2000	2001	2002	2003	
Promote energy efficiency and improve the environment:							
Provide tax credit for energy-efficient building equipment		-123	223	283	341	-409	-1,379
Provide tax credit for the purchase of new energy-efficient homes		-7	-23	-38	-54	-75	-197
Provide tax credit for high-fuel-economy vehicles				-60	200	-400	-660
Equalize treatment of parking and transit benefits		-4	-11	-16	-23	-30	-84
Provide investment tax credit for CHP systems	10	-270	281	113	-95	-183	-942
Provide tax credit for replacement of certain circuitbreaker equipment		-3	-9	-11	-8	-5	-36
Provide tax credit for certain PFC and HFC recycling equipment		-3	-7	-7	-6	-3	-26
Provide tax credit for rooftop solar equipment		-6	-16	-24	-31	-43	-120
Extend wind and biomass tax credit		-5	-20	-38	-55	-73	-191
Subtotal, promote energy efficiency and improve the environment	10	-421	590	590	813	-1,221	-3,635
Other provisions that affect receipts:							
Reinstate environmental tax imposed on corporate taxable income \2\		1,074	696	690	690	691	3,841
Reinstate Superfund excise taxes \1\	75	701	711	720	731	743	3,606
Extend excise taxes on gasoline, diesel fuel and special motor fuels \1\			371	382	391	403	1,547

THEORETICAL ADVANTAGES AND DISADVANTAGES OF TAX  
AND DIRECT EXPENDITURE APPROACHES TO  
BEHAVIOR MODIFICATION

An understanding of the means by which direct and tax expenditures confer benefits — “rents” — on stakeholders while shielding the policy maker from scrutiny is necessary before delv-

20. *Id.*

ing into the “rents” captured by the various stakeholders in the CCTI.

#### ECONOMIC PROS AND CONS

Tax credits given directly to businesses as an incentive for behavioral modification tend to be an inefficient means of modifying behavior. Twelve GAO studies indicate that only large tax credits tend to effect the behavior of businesses and these credits are often utilized by companies who would have changed their behavior anyway.<sup>21</sup> Profit maximization therefore mandates political action to garner inefficient, from the standpoint of the Fisc., tax incentives which result in windfall revenue to the company.<sup>22</sup> A direct expenditure program is constructed, studied, and more carefully monitored by a congressional subcommittee with expertise in the area. Because of this increased accountability, such political maneuvering would be less effective in obtaining *unintended* economic benefits through direct command-and-control expenditures.

Tax credits may also be enacted on the demand side by giving the credit to the consumer of the good produced by a business rather than giving the credit directly to the business. Unfortunately, a credit favoring an investment enacted on the demand side may still lead to windfalls for the supplier of the investment. This is particularly true where money is being injected into a market which is not perfectly competitive for the purpose of the behavior modification of the consumer. A credit to the consumer increases the demand for the tax favored product. Until the supply adjusts to meet the demand the suppliers will capture some of the tax credit in the form of higher prices — an implicit tax.<sup>23</sup> A command-and-control (i.e. a direct expenditure program) administered through DOE or the EPA mandating supplier compliance with certain goals — a required ratio of sales of fuel-efficient automobiles to sports utility vehicle (SUV) for example — would not suffer from the capture problem, although, there would be more economic overhead flowing into federal bu-

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21. Richard A. Westin, *Understanding Environmental Taxes*, 46 TAX LAW. 346 (1993).

22. A tax credit is also superior to direct expenditures from the beneficiaries standpoint because it is not included in income. A direct government expenditure is considered ordinary income to the recipient and is taxed as such. *See generally* STANLEY S. SURREY, *PATHWAYS TO TAX REFORM: THE CONCEPT OF TAX EXPENDITURES* (1973).

23. *See* Yorio, *supra* note 14, at 398.

reaucracy. The EPA acknowledges that in some cases command-and-control is an inefficient means of forcing behavior modification due in large part to monitoring and compliance costs.<sup>24</sup>

#### EASE OF PASSAGE

The convoluted nature of tax expenditures may cause congressional representatives to pass legislation they would not pass if they fully understood the ramifications and scope of the expenditure. Stanley Surrey notes that,

The first step in testing the proposed tax incentive is to translate it from tax language into direct expenditure terms. However, this step, on its face seemingly an obvious necessity, is generally not taken when tax incentives are proposed. Instead, the tax incentive remains cast in its tax language and legislators who consider it are generally unaware of its direct expenditure meaning. As a consequence, many a tax incentive finds its way into the tax law.<sup>25</sup>

A direct subsidy program, in contrast, must come attached with a funding mechanism<sup>26</sup> — the tobacco settlement money in the case of the Climate Change Technology Initiative. Tax incentives therefore provide a means for lobbyists to push through tax legislation which heavily favors them. Often these tax credits may be introduced as inexpensive incentives to help achieve a social end. Piercing through the sponsor's veil often reveals the backing of a special interest. The incentives frequently make it through the Finance and Ways and Means Committees as well because the members of these committees lack the expertise to evaluate them. Even Zelinski acknowledges that review of tax expenditures by the appropriate substantive committee along with review by the tax committee would be appropriate.<sup>27</sup>

#### ONCE PASSED TAX EXPENDITURES ARE SUBJECT TO LESS SCRUTINY

Although the tax expenditure budget has increased accountability for tax expenditures, once established tax expenditure programs may enjoy political advantages over their direct spending

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24. See Westin, *supra* note 22, at 335.

25. See SURREY, *supra* note 23 at 39.

26. Yorio, *supra* note 14, at 424.

27. Zelinski, *The Tax Reform Act of 1986: A Response to Professor Yorio and His Vision of the Future of the Internal Revenue Code*, 55 *FORDHAM L. REV.* 885, 891 (1987).

counter-parts. The major advantage of tax expenditure programs is their priority over direct spending programs:

Thus national defense currently has a lower priority than funds expended through the tax system for motels, motions pictures, luxury housing, cattle feeding programs, and the like. This automatic priority status undoubtedly contributes much to the popularity of tax expenditures with their beneficiaries . . . . Given the existing lack of coordination in that [the budget] process, lobbyists for a particular group have a strong incentive to try to get their subsidy programs treated as tax expenditures rather than as direct outlays.<sup>28</sup>

A major reason for the failure of the executive and legislative branches to critically examine tax expenditures when determining budget priorities stems from a lack of integration of the tax expenditure budget with the regular budget. The Office of Management and Budget and the Congressional Budget Office lack a systematic approach to combining expenditures from the two budgets designed at achieving similar ends. The "Special Analysis" conducted by the OMB attempts to integrate the two budgets on particular issues but often falls short.<sup>29</sup>

Taxes and credits also tend to be favored by special interests over direct or command-and-control expenditures because once in place they are frequently left alone.<sup>30</sup> Tax expenditures are difficult to understand and have "a protective coloration" achieved by their chameleon-like ability to blend into the muddied sea of the 26 U.S.C. text.<sup>31</sup> Attempts to limit the fixture status of taxes have been met with opposition from business leaders and some members of Congress. Where automatic termination dates are employed Congress will frequently provide extensions with only cursory review.<sup>32</sup> In the 1970's "sunset legislation" was introduced on several occasions and met with opposition by some business leaders and members of Congress. Sunset review would have applied to both direct expenditures and tax expenditures and it was only to the tax expenditures that these groups objected. The best argument put forward against sunset review was that scheduled review and termination would

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28. SURREY AND McDANIEL, *supra* note 19, at 33.

29. The 1985 "Special Analysis K" on research and development fully discussed direct governmental research and development expenditures but omitted the \$1.4 billion tax credit for research and development costs incurred by businesses. *Id.* at 39.

30. Westin, *supra* note 22, at 360.

31. SURREY, *supra* note 23, at 92.

32. SURREY AND McDANIEL, *supra* note 19, at 55.

create uncertainty in the business community which would discourage investment and use of the incentives.<sup>33</sup> Uncertainty in long run variables can cause under-responsiveness to incentives.<sup>34</sup> This same uncertainty exists with direct expenditure programs as well, however, and in any event could be circumvented through the adoption of automatic termination on the given section of code providing the incentive.

Conventional wisdom holds that the tendency of incentives to get lost in the code is aggravated by the fact that tax incentives are administered by the Treasury and the IRS under the Executive and the House Ways and Means Committee and the Senate Finance Committee under Congress. Individuals working for these organizations are experts on tax and finance issues but lack knowledge of specific target areas. They are not in a position to closely monitor social activities like education, housing, or the environment nor do they have the resources. There are specific federal organizations under both branches of the federal government with expertise on the specific needs of the populations they have been established to serve and on the best means to achieve proper implementation in these areas. Implementation through the tax code confuses responsibility and allows items to go unmonitored.

The Zelinski response to the "lost in the code" argument is that money spent on research and development may also become easily lost. The number of interests fighting for tax expenditure dollars and the fact that members of the Senate Finance Committee and the House Ways and Means Committee deal with so many of these interests makes it unlikely that a provision in the code will be forgotten about. Direct expenditures go to administrative bodies which serve a limited number of interest groups that share a common area of need. Once the funding goes to the agency the spending is visible only to those involved with the particular area. The oversight committee for the agency will be subject to the pressures of only a limited number of groups involved in the agencies area of coverage — agriculture, health and human services, transportation, etc. These limited constituencies may hold great sway over the members of the committees in the form of past and future campaign contributions. These agencies

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33. SURREY AND MCDANIEL, *supra* note 19, at 57.

34. *See generally* Chase, *supra* note 13.

also have an incentive to acquire as much funding as they can to continue their existence.

While businesses have every incentive to gain as much government funding as they can, in the competitive environment of Gucci Gulch — Zelinski's term for the areas outside of the Finance and Ways and Means Committees — interest groups must compete for these dollars. The members of these committees have no fear of losing their jobs by transferring tax expenditure dollars to areas they deem more efficient.<sup>35</sup> Zelinski's research on Political Action Campaign contributions to the various committees suggests that the funding for the tax committees is more broad based. His research also indicates that that trade publications tend to focus on the activities of direct expenditure processes, a break from the focus of the general press on the activities of tax related federal institutions. This coverage tends to indicate that most trade members are more interested in the goings on of the administrative bodies, likely due to their increased ability to influence these bodies to their advantage. He does note, however, that the primary journals of the oil industry have a greater coverage of the Finance and Ways and Means committees than committees and agencies that have jurisdiction over the petroleum industry. He attributes this to the traditional success of oil companies in the tax writing committees.<sup>36</sup> Interestingly, the Clinton proposal funnels money, albeit indirectly, to oil through the direct expenditure research and development side administered through DOE.<sup>37</sup>

#### OTHER RATIONALE

Direct subsidies may also “be targeted precisely to the particular regions, states, groups, or individuals who are in need of government help or whose behavior the government wants to influence” while tax expenditures are not as capable of such narrow tailoring and may result in inefficient returns as well as aggravating groups who feel they have not been given a fair share of the tax break.<sup>38</sup> Related to the tailoring advantage is the fact that a network for disseminating information about direct expenditure programs has already been established by various govern-

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35. Zelinski, *supra* note 12, 1176-1183.

36. *Id.* at 1184.

37. This indirect increase in funding is at least partially offset by cutbacks in other subsidies to the industry. See *supra* note 5.

38. *Supra* note 14, at 423.

ment agencies who are familiar with the various groups that would benefit from a certain policy.<sup>39</sup> Zelinski's response is that the tax infrastructure will provide adequate dissemination to individuals and companies of material that is relevant to them. He also points out that "applications for federal funds make Form 1040 look like a model of simplicity . . . [and that] grant writers tend to style themselves as [expensive] consultants and frequently have MBA's."<sup>40</sup> Both Yorio and Zelinski agree that large corporations with existing relationships with government agencies will likely incur lower transaction, i.e. administrative overhead, costs with direct expenditure programs than with tax incentive programs. As stated by Zelinski:

I thus conclude that programs aimed at large corporations should be presumptively structured as direct outlays, those for smaller businesses and middle class households as tax incentives. If the federal government wants Fortune 500 companies to build low-income housing, direct grants seem most efficient. If Congress wants professionals to invest in low-income housing, tax expenditures will be the cheapest way to communicate this policy.<sup>41</sup>

The CCTI follows this advice closely. The CCTI grants research and development money through direct expenditures to large companies and research institutions which have worked in the past with DOE and the EPA to develop more efficient means of producing and using fossil fuels and to develop alternative energy resources, while giving tax incentives to smaller businesses and households to make their buildings and equipment more energy efficient.

A final reason businesses might favor tax expenditure support over direct expenditure support has to do with the current structure of international tax treaties. Most of these treaties contain a nondiscrimination clause which prohibits a country from subjecting foreign businesses to taxes that domestic businesses are not subject to. The goal of this clause is to promote fair competition. This clause does not prohibit governments from supporting domestic businesses through tax expenditures however.<sup>42</sup> Thus, when selling goods nationally, a domestic corporation which receives a tax credit has an advantage over foreign corporations which do not. While the CCTI directs a large portion of money

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39. *Id.* at 427.

40. *Supra* note 12, at 892.

41. *Id.* at 892.

42. *Supra* note 19, at 171.

to businesses through direct expenditures, the substantial tax credit for energy-efficient building equipment, the investment tax credit for CHP systems, the credit for the replacement of antiquated circuitbreaker equipment, and the extension of the wind and biomass credit all give companies a competitive edge over international competitors.

### III.

#### THE TRIUMPH OF PLURALISM: SPECIAL INTEREST GAINS UNDER CCTI

The Energy Information Administration projects that if we continue to follow current consumption patterns, fossil fuels will be supplying roughly 88% of domestic energy consumption in the United States by the year 2015.<sup>43</sup> A change in the status quo will thus require at least one of three measures: sharp conservation, the creation of more energy-efficient technologies, or a switch to other forms of energy production that do not cause the release of carbon dioxide into the atmosphere. *Ceteris Paribus*, each of these measures will be met with opposition from at least one of the following groups: public consumers of energy, the fossil fuel industry, the energy production industry, and industrial consumers of energy.

To the extent that the Climate Change Technology Initiative slows global warming or generates momentum towards a more comprehensive solution to the warming problem the American people are better off. Reality warns that that the CCTI will have only a negligible impact on slowing global warming. In fact, even full compliance by all countries with the Kyoto Treaty would result in only a slight reduction in the rate of increase in warming. Out of this fatalistic thought process emerges the conclusion that there are other interests at stake in the implementation of the CCTI. In fact, the CCTI has something for almost everyone and in opting out of a conservation oriented approach harms nothing but the Fisc.<sup>44</sup> The table below outlines what various sectors of the economy, and the respective bodies that regulate them, stand to gain through the adoption of the CCTI:

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43. H. REP. NO. 105-163, at 157 (1997).

44. The author states no opinion on the relative merits of depleting the revenues of the Treasury except to point out that from a policy making standpoint the policy is inefficient given the prior stated definition of inefficiency.

CLIMATE CHANGE TECHNOLOGY INITIATIVE (SECTORS)  
(In millions of dollars)

Key Sectors	1998 Estimate	1999 Proposed	Dollar Change: 1998 to 1999
Discretionary Budget Authority:			
Buildings	146	264	+118
Industry	156	216	+60
Transportation	246	356	+110
Electricity	220	332	+112
Carbon Sequestration and Cross-Cutting Research		42	+42
Policy Analysis, Market Incentives	6	26	+20
Program Direction	45	57	+12
<b>Total</b>	<b>819</b>	<b>1,292</b>	<b>+473</b>

BENEFICIARIES OF THE REPUBLIC

By bundling a tax incentive program with a direct expenditure program, Clinton succeeded in splitting the difference among two competing interests for government expenditures. The \$2.7 billion for research and development on energy issues will be administered through a number of government agencies (see table 6-2) who will absorb a portion of the money directly. Some of this money will then go to businesses (discussed in more depth below) and traditionally liberal academics and researchers. The administrators in these agencies and the researchers behind them are almost always supporters of a liberal republic and therefore of Clinton. The strength of this group forms the foundation of Clinton's strength and it is in his interest to both keep this group supportive of him and to keep this group, the root of his power, strong. These agencies have also been incredibly effective in successfully initiating research and development projects which have had very positive outcomes. Contrary to Zelinski's fear that these bureaucrats might waste money these agencies have enacted strict guidelines and goals with detailed benchmarks.<sup>45</sup> The

45. DOE's goals and benchmarks provide an example of this vigor: "In 1999, DOE's Energy Conservation program will: [e]xpand the Clean Cities program to create continuous corridors of alternative transportation fuel availability in and between 10 major urban centers; [b]ring together over 600 utility partners in a Climate Challenge forum in which the utilities exchange lessons-learned on voluntary efforts to reduce greenhouse gas emissions; and weatherize 77,000 low-income homes. Solar and renewable energy programs, for which the budget proposes \$372 million, focus on technologies that will help the Nation use its abundant renewable resources such as wind, solar, and biomass to produce low-cost, clean energy that contributes no net carbon dioxide to the atmosphere. The United States is the world's technology leader in wind energy, with a growing export market and production costs that

federal government is not the inefficient Goliath of yesterday. The \$3.6 billion in tax expenditures pleases the conservative wing of the republic. Accountants and tax lawyers understand that these incentives create new tax issues and complexity which means business for them. MBA's will try to construct deals for companies that take advantage of the tax credits and the grant money.

#### STATE'S RIGHTS

Individual states vary widely in their fossil fuel consumption and in the amount of carbon dioxide they release into the atmosphere. California emits as much carbon dioxide as all of Scandinavia combined.<sup>46</sup> Texas is the seventh largest carbon dioxide producer.<sup>47</sup> Some states emit a globally negligible amount of carbon dioxide. Some conservative interests may therefore oppose the CCTI on the grounds that it involves a further expansion of federal power into an area which is properly under the jurisdiction of states. Those who believe firmly in strong state governments are similar to the "Greens" (discussed below) in that the "rent", in this case the penalty, at stake in the CCTI is non-eco-

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have fallen below five cents per kilowatt-hour. In addition, photovoltaics are becoming more useful in remote power applications, and construction is beginning on the first large-scale facilities to produce ethanol from cellulosic agricultural waste. DOE also is coordinating the President's Million Solar Roofs initiative, and States, cities, and Federal agencies to date have pledged 470,000 solar roof installations (a mixture of solar heat/hot water and photovoltaics) over the next 10 years. In 1999, DOE's Solar and Renewable Energy program will: support the President's Million Solar Roofs initiative through partnerships and technical assistance so that at least 7,000 solar roofs will be installed in 1999; complete five commercial-scale demonstrations of the use of biofuels in power-plants by co-firing coal with at least five percent biomass fuel; and install 20 manufacturing prototype and four advanced prototype 25-kW dish/engine solar thermal systems at utility/field sites through the Utility-Scale Joint Venture Program. Both the energy-efficiency and renewable energy (EERE) programs have established goals to ensure that their research programs are cost-effective and high quality. Performance measures include: continued use of cost-sharing as a major program criterion in cooperative agreements and industry partnerships. In 1999, DOE/EERE will maintain an industry cost-share level of over 40 percent, when averaged across all work with industry. Every EERE program will develop progress milestones and estimates of energy-related program benefits annually. At least 25 percent of the milestones and estimated benefits will undergo external peer review each year, with a goal of having all milestones and estimated benefits peer-reviewed at least once every four years. Cumulative consumer economic savings from past and current EERE programs will exceed \$11 billion in 1999." *Supra* note 5.

46. Henry Lee, *The Political Economy of Energy Taxes: an Assessment of the Opportunities and Obstacles*, 12 *PACE ENVTL. L. REV.* 77, 87 (1994).

47. Muller & Hoerner, *supra* note 3, at 6.

nomic. This group does have some justification for their position. Attempted state action involving manipulating markets, generally through the tax system, in the name of the environment tells us a great deal about how various stakeholders — such as business entities, environmental interest groups, and political groups — might respond to federal or international action.<sup>48</sup> State legislatures also provide a forum to raise issues and change perceptions.<sup>49</sup> State environmental policy frequently influences Congress.<sup>50</sup> State action increases the feasibility of federal action because: familiarity aids the political process, legislators understand the politics in terms of income, consumption and their regional interests, administrative agencies know how to

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48. Plans and goals for reducing greenhouse gas emissions have been developed in a number of states. These states include: Vermont, Connecticut, California, Massachusetts, New York and Nevada. Muller & Horner, *supra* note 3, at 6. In 1992 legislators in Maryland attempted to pass a \$7.50/ton carbon tax. Under the proposed regime taxes payable by individual manufacturers would have been capped in order to protect energy intensive industries from suffering excessively from interstate and international competition. This cap was not sufficient to prevent the opposition of steel, aluminum, and paper mills - all energy intensive industries. The tax was also strongly opposed by the electrical and gas utilities industries. Supporters of the tax included environmental groups, developers of a co-generation project associated with the state's chemical industry (i.e. alternative fuel developers), and service station owners who feared that in the absence of the proposed tax, an even higher tax increase would be imposed on motor fuels in order to raise revenue - which suggests that two potential enemies of reform may be played against one another. *Id.* at 48. California provides another case study of a failed carbon tax. A proposal introduced by Assemblyman Tom Bates endeavored to place a phased in carbon tax which would peak at \$21/ton by 2003. The bill exempted households from the tax up to a baseline level for electricity and gas consumption. This proposal received strong support from the environmental community and from some businesses, including Ford Motor Company, and was opposed by the California Manufacturers Association, as well as electric and gas utilities. The Bill was suspended in committee. *Id.* at 51. Like the Maryland proposal, fossil fuel burners and industrial electrical consumers stood against the legislation while the environmental groups stood for the proposal. The interesting twist in California was the support of Ford Motor Company. Support which Ford has echoed at the national level. These case studies seem to indicate that: special interests tend to line up in manner consistent with their social and economic goals; compared with a carbon emissions tax, a state tax credit is a giveaway to corporate polluters and is thus more likely to succeed, Walter R. Burkley, *Special Project: Environmental Reform in an Era of Political Discontent*, 49 VAND. L. REV. 677, 681 (1996); while states would not likely support a tax to save the world from global warming, a tax could provide a boost to revenue which might garner support from those wishing to increase the size of government while a tax credit might garner support from those wishing to decrease government revenue during an economic boom [Lee, *supra* note 47, at 88]; and, that fear of an even greater sanction may motivate compromise.

49. This diversity of experience led constitutional scholar Lawrence Tribe to call the states laboratories of democracy.

50. Lee, *supra* note 47, at 84.

administrate and may estimate impacts, interest groups know where they stand, and practical experience can guide legislative drafting.<sup>51</sup> Such grassroots action may also stimulate support among the populous by encouraging people to take personal responsibility for the environment.<sup>52</sup> Action at the state level may also spur more informed federal action, which in turn could spur international action. State-federal agreements are possible on the carbon tax issue and the commerce clause does not prohibit joint or unilateral action.<sup>53</sup> Energy taxes have already been implemented jointly in the case of gasoline taxes.<sup>54</sup>

In spite of the modeling benefits states provide, individual state action to solve the warming problem is not politically feasible. Giving federal power to states may cause the states to compete for lowest standard in order to attract businesses.<sup>55</sup> The most important reason for this is that any state that didn't act to reduce warming would constitute a free rider. The marginal benefit of an individual state's action to itself is fairly low.

Another interest that legislators from various states will have depends on their reliance on fossil fuel both as consumers and as producers. Past federal energy taxes have caused intense re-

51. Muller & Hoerner, *supra* note 3, at 24.

52. Dewitt John refers to this sort of growing local support for environmental action "civic environmentalism". See Dewitt John, *Civic Environmentalism: Alternatives to Regulation in States and Communities* (1994).

53. The use of an emissions trading allowance system is well established and effectively used on the federal level. The EPA has already implemented credit trading systems for sulphur dioxide, CFC's, and lead through and command and control model. This feature does not reduce overall levels of pollution in the short run but gives environment friendly industries a competitive advantage which leads to a long run reduction. See Michael D. Mehta, *Risk Assessment and Sustainable Development: Towards a Concept of Sustainable Risk*, 8 RISK: HEALTH SAFETY & ENV'T 137, 149 (1997). The 1990 Amendments to the Clean Air Act also established such a system for many air born pollutants. Tanya L. Forsheit, *International Emissions Trading: Equity Issues in the Search for Market-Based Solutions to Global Environmental Degradation*, 18 U. PA. J. INT'L ECON. L. 689 (1997). The fees incorporated in the 1990 Amendments to the Clean Air Act are themselves thinly veiled taxes on pollution - though the target is not carbon emissions they are reduced indirectly through the taxes present on fossil fuel consumption. Chase, *supra* note 11, at 730. The market, and emissions trading in particular, appear to have saved a great deal of money relative to estimates for implementation of the 1990 Amendments to the Clean Air Act through command and control structures. Forsheit at 709. For such a regime to be feasible on a global level, a central registry - perhaps the International Monetary Fund or the World Bank - would have to be developed like the one currently administered by the EPA for emissions trading under the Clean Air Act. *Id.* at 704.

54. Muller & Hoerner, *supra* note 3, at 17.

55. Burkley, *supra* note 49, at 683.

gional political warfare as states that are more reliant on high carbon fuels suffer a greater burden under the tax.<sup>56</sup> Tax credits would provide a windfall to states that are greater consumers of fossil fuels as they are rewarded incrementally for reforming the highly environmentally irresponsible behavior of their citizens. The CCTI might also provide a greater windfall to coal producing and consuming regions and a lower burden on areas that rely on hydropower for their energy because this is where the research and development money for efficiency improvements is likely to be funneled to.

The proposed DOE budget does give out one incentive directly to states through its energy conservation program:

Energy conservation programs, for which the budget proposes \$809 million, are designed to improve the fuel economy of various transportation modes, increase the productivity of our most energy-intensive industries, and improve the energy efficiency of buildings and appliances. They also include grants to States to fund energy-efficiency programs, low-income home weatherization, and the administration of minimum energy-efficiency standards for many major home appliances.<sup>57</sup>

State's rights ideology and equity consideration notwithstanding, these grants give legislators something they can take back to their electorate and their governors.

#### THE PUBLIC

In examining the political barriers to reducing greenhouse gas emissions it is important to keep in mind that political decision making is heavily dependent on fulfilling a public perception that their will is being served. A republican form of government places agents of the people in power. These agents must, at a minimum, keep their constituents sufficiently content to put them back into office. Politicians are thus wary of public response when implementing any policy. The people are thus silent though omnipresent in the pluralistic decision making process of United States energy policy. The bulk of public opinion studies demonstrate that voters are poorly informed about political and public finance issues.<sup>58</sup> Because of this the name of the game is to *Trump Le Monde*, to fool the eye of the electorate into think-

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56. Lee, *supra* note 47, at 83.

57. See *supra* note 5.

58. Edward A. Zelinski, *The Unsolved Problem of the Unfunded Mandate*, 23 OHIO N.U.L. REV. 741, 749 (1997).

ing they are getting more than they actually are. At best the public perceives only the most basic point about issues of public policy: President Clinton wants to stop global warming. Therefore, a shift in public perception about the importance of preventing global warming is important for garnering political support in favor of a solution.

Where a public policy has a direct bearing on an individual, they are more well informed. Personal income tax policy, for example, while poorly understood, is heavily scrutinized by the public and the public will almost never support a new tax unless it is disguised or — in some instances — if it targets a disfavored demographic.<sup>59</sup> Politicians in both parties are wary of this fact and have steered clear of any discussion of a tax increase. According to polls, most Americans are familiar with global warming and have expressed support for carbon dioxide reduction. These positive responses tend to vary with the “salience” of global warming to the population. The more people feel warming impacts their daily lives the more willing they are to make sacrifices to stop global warming.<sup>60</sup> Americans are also more likely to support an expenditure if the proceeds are ear-marked for environmental purposes, but less so where the costs of the program are felt but improvement in environmental quality is not.<sup>61</sup>

Historically, environmental concerns suffer when the economic interests of individuals is the driving political force.<sup>62</sup> This is due to the fact that the implementation of many environmental regulations slows production and therefore reduces the level of consumption which the populous is used to. Where taxes are hidden such that the public does not perceive that environmental regulations are hurting their consumption, such regulations are more likely to be implemented. Uncertainty surrounding the degree to which a reduction in greenhouse gas emissions will reduce global warming, and uncertainty involving the actual impact of warming

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59. Burkley, *supra* note 49, at 683.

60. The salience of global warming peaked during scorching 1998 and was at a low during the exceptionally cold winter of 1989. The salience data also indicates that heightened concern, based on accurate or inaccurate data, improves support for policies to combat global warming as well as the willingness to pay for them. Perhaps environmental supporters should run an add campaign. See Richard J. Bord, Ann Fisher, and Robert E. O'Connor, *Is Accurate Understanding of Global Warming Necessary to Promote Willingness to Sacrifice*, 8 RISK: HEALTH SAFETY & ENV'T 339 (1997).

61. See Westin, *supra* note 22, at 358.

62. Burkley, *supra* note 49, at 678.

itself, leads to the effects of denial, discounting, and aggravated uncertainty. Even where the costs are known individuals will want some rate of return for foregoing pleasure now.<sup>63</sup>

Americans may support a collective tax action in a way that their individual preferences may not indicate.<sup>64</sup> Americans tend not to see their personal consumption as an important factor in global warming. Instead they shift the blame to business and industry. Americans favor taxes on business, as opposed to personal income taxes, to solve the warming problem. This is true even where they are told to assume that the cost of the tax will be passed along to them.<sup>65</sup> The Clinton tax credit proposal provides a perfect device for harnessing this abstract support for environmental action by giving tax credits to individuals who alter their behavior in an environmentally friendly manner and by hiding the cost of research and development subsidies to business in the direct and tax expenditure budgets. Politicians on both sides of the fence can find ideological justifications for such actions to present to their constituents:

. . . [T]he popularity of the tax device “derives from a peculiar alliance among conservatives, who find attractive the alleged reduction in the role of government that would follow from extensive use of tax credits, and liberals anxious to solve social and economic problems — by whatever means — before it is too late.”<sup>66</sup>

There is also a divide between the wealthy and the poor on energy tax issues. Energy expenditures account for a greater proportion of the income of poor households. Therefore energy taxes are regressive.<sup>67</sup> Politicians representing a poorer constituency may therefore have difficulty supporting a tax on energy even where these politicians tend to favor green politics. Such taxes appear to be effective, to the extent that as the price is pushed up, consumers may switch to more energy efficient appliances<sup>68</sup>; however, the wealthy will tend to ignore price changes

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63. Jay Michaelson, *Geoengineering: A Climate Change Manhattan Project*, 17 STAN. ENVTL. L.J. 73, 85-86 (1998).

64. This view may encompass our shared values and interests. See David M. Driesen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost-Benefit Analysis*, 24 ECOLOGY L.Q. 545, 580 (1997).

65. Bord, Fisher, and O'Connor, *supra* note 61, at 354.

66. SURREY, *supra* note 23 at 147 citing Henry J. Aaron, *Tax Exemptions - The Artful Dodge*, TRANSACTION, Mar. 1969, at 5.

67. Amy C. Christian, *Designing a Carbon Tax: The Introduction of the Carbon-Burned Tax*, 10 UCLA J. ENVTL. L. & POL'Y 221, 250 (1992).

68. Driesen, *supra* note 65, at 570.

caused by taxation.<sup>69</sup> This analysis suggests that a market-based approach will impact the behavior of the poor but not the wealthy. This may be an unfair burden to thrust on the poor as the inelastic nature of energy usage for the poor shows that energy usage at current levels by the impoverished is a necessity.<sup>70</sup> The Democrats have trouble endorsing a policy which burdens the poor. The Republicans have little desire to impose a tax of any sort on the wealthy or the poor. The bottom line is that there are more poor Americans than wealthy Americans. Therefore any program to reduce energy consumption must target the poor. Such a forced conservation oriented approach appears to be politically untenable and the CCTI has wisely steered clear of it.

A tax credit approach encouraging consumers to invest in alternative energy sources such as the purchase of solar cells for their roofs and more fuel efficient cars is more politically tenable and likely to be effective. To the extent that an energy tax is regressive, a tax credit is progressive.<sup>71</sup> Empirical data supports the efficacy of tax credits for encouraging people to use home-based alternative energy sources.<sup>72</sup> Politicians who favor the poor can point to the refundability and advanced disbursement of the credit plan.<sup>73</sup> The died-in-the-wool environmentalists will be particularly pleased with the 15% credit for his purchase of a new Geo Metro and his wife's purchase of a rooftop solar electricity and hot water system.<sup>74</sup> Those who do not benefit from such programs are unlikely to object because the costs are hidden somewhere in the tax or direct expenditure budget and are not worthy of note in people's busy lives.<sup>75</sup>

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69. Westin, *supra* note 22, at 350. Taxes ignored, and therefore paid, by the affluent do have the virtue of being beneficial to the Fisc.

70. Therefore, to the extent that energy reduction over status quo levels could be forced it would represent a substantial decrease in the standard of living of America's more impoverished populations.

71. Subject to the caveat that where there is a high fixed cost to obtaining the credit - and there is a significant fixed cost component to the installation of a solar heating system, the installation of new insulation, or the purchase of a new car - many impoverished people will be shut out. The credit should also be refundable and advance disbursement - as with the Earned Income Tax Credit - should be permitted. These provisions will give the poor a greater incentive, as well as the means, to install these devices.

72. Westin, *supra* note 22, at 347.

73. Assuming the tax credit plan is properly structured as discussed *supra* note 72.

74. Stuart E. Eizenstat, CONG. TESTIMONY, 1998 WL 8991941 at 13 (2/11/98).

75. Information inconsistent with an individual's cognitive schema is unlikely to be processed into a meaningful feeling and idea. Zelinski, *supra* note 59, at 752.

## THE POWER OF ENERGY PROVIDERS

Energy providers have a mixed stake in preventing the shift to alternative energy resources. The status quo is heavily reliant on coal fired power plants for electricity. Nuclear power is also playing an increasing role in both domestic and international energy markets. Hydropower, natural gas, windmills, and solar cells compete with coal and nuclear power as energy sources.<sup>76</sup> While the \$3.6 billion tax credit component of the Clinton plan encourages the demand side for alternative energy resources the \$2.7 billion earmarked for research and development spending under the plan draws a compromise with the fossil fuel industry. The program provides support for nuclear power and alternative energy resources but also has a provision for:

Fossil fuel energy R&D programs, for which the budget proposes \$383.4 million, [which] help industry develop advanced technologies to produce and use coal, oil, and gas resources more efficiently and cleanly. Federally-funded development of clean, highly-efficient gas-fired and coal-fired generating systems aim to reduce greenhouse gas emission rates, while reducing electricity costs compared to currently available technologies. The programs also help boost the domestic production of oil and natural gas by funding R&D projects with industry to cut exploration, development, and production costs.<sup>77</sup>

Alternative fuels have already begun a dramatic fall in price and economies of scale should prompt an even faster fall in the price of alternative fuels as research and development continues.<sup>78</sup> Representatives from both parties who hail from fossil fuel states have an interest in blocking this legislation.<sup>79</sup> Additionally, while the fossil fuel industry has ties to the Republican party, labor has a strong interest in keeping the industry strong because many members of the Coal Miners Union would lose their jobs following a shift to alternative fuel sources.<sup>80</sup> These

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76. Note that the nuclear power industry also stands to gain to the extent that the use of fossil fuels is impeded; although, the development of "alternative energy resources" is contrary to the interests of the industry.

77. See *supra* note 5.

78. Driesen, *supra* note 65, at 568.

79. See *supra* part "Beneficiaries of the Republic."

80. There is some precedent for the federal government placing market burdens on the coal industry. The Surface Mining Control and Reclamation Act of 1977 has already levied a tax of \$.35/ton for surface coal and \$.15/ton of subsurface coal. This tax is used to close down old mines. *Supra* note 22, at 353. See also *supra* note 13 (which provides additional precedence to the acceptance of a tax on coal by the mining industry; however, in this case the proceeds from the tax were earmarked for

concerns are unlikely to override the industry's willingness to sit on the side-lines in order to receive the substantial subsidy for fossil fuel research and development through DOE. Indeed from the stand-point of international competition these research and development subsidies are a boon to the United States energy industry across the board:

DOE's energy R&D investments cover a broad array of resources and technologies to make the production and use of all forms of energy—including solar and renewables, fossil, and nuclear—more efficient and less environmentally damaging. As the President's Committee of Advisors on Science and Technology has noted, Federal R&D support can help develop these technologies that benefit society by cutting emission rates of greenhouse gases, acid rain precursors, and air pollutants. These investments not only lay the foundation for a more sustainable energy future but also open major international markets for manufacturers of advanced U.S. technology.<sup>81</sup>

#### THE MIGHT OF INDUSTRY

Industrial users of energy have a stake in getting energy at the cheapest rate possible. The advent of the hydrogen fuel-cell and cheap solar cells have helped to reduce the price of energy.<sup>82</sup> Further research and development funds should help reduce the price of energy further. To ensure that the research and development funds spent on increasing energy efficiency and developing alternative energy technologies do not go to waste, federal administrative agencies work directly with the industry in developing these products in order to provide a product which the end-user can benefit from and will use:

Many of the programs rely on partnerships with the private sector to leverage Federal spending with industry cost-sharing and to increase the likelihood that the technologies will be used commercially. Energy-efficiency technologies that have already come to market include heat-reflecting windows, high-efficiency lights, geothermal heat pumps, high-efficiency electric motors and compressors, and software for designing energy-efficient buildings. Meanwhile, five other technologies available for at least five years

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the benefit of miners disabled with black lung - the story does point up the effectiveness of giving back to the industry which you tax when it comes to gleaning political support for a tax proposal).

81. See *supra* note 5.

82. Westin, *supra* note 22, at 347.

have generated over \$11 billion in total consumer and business energy savings to date.<sup>83</sup>

The market for pollution control technology is an input into the price of the good. It is a production factor.<sup>84</sup> Generally, the cheaper the good the more units can be sold and the greater the short-run profit. In the long run, however, a competitive provider should be indifferent to the cost of this input as other competitors will have the same cost constraints and will be forced to pass the reduction in energy price along to the consumer. Of course markets are not perfect but it seems likely that general industrial consumers of energy will be fairly indifferent to carbon emissions reduction legislation.

Certain segments of industry have a more direct interest in carbon emissions regulation. Where the production or use of the product itself requires significant carbon emissions the market for the product will likely be hurt as people forego the purchase of the product or find substitutes. Where the government creates incentives, they must be long enough and predictable enough so that firms can count on them when making decisions involving the purchase of long term capital equipment (e.g. land, plant, and equipment).<sup>85</sup> The automobile industry, which is already subject to emissions requirements under CAFE<sup>86</sup>, is a powerful interest which would be seriously impacted by the Clinton proposal. The support of some major American automobile manufacturers for carbon emissions reduction programs, and tax credits in particular, thus comes as a surprise.

Ford and GM both petitioned, successfully, to have CAFE standards reduced for the 1986-1989 model years. Their petitions for further reductions in 1990 failed.<sup>87</sup> More recently, in response to continuing consumer demand for fuel-inefficient vehicles, auto-manufacturers have invested a great deal of money in equipment to produce sports-utility vehicles, minivans, and light

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83. *See supra* note 5.

84. Driesen, *supra* note 65, at 579.

85. Westin, *supra* note 22, at 348.

86. The "corporate average fuel economy" (CAFE) standard imposes a "Gas Guzzler Tax" on vehicles which do not achieve a minimum miles per gallon standard. This tax is placed on the vehicle manufacturer, although the wary consumer can often find the penalty incorporated as an itemized charge on the sticker price of the vehicle. *See* J. Yost Conner, Jr., *Revisiting CAFE: Market Incentives to Greater Automobile Efficiency*, 16 VA. ENVTL. L.J. 429, 443 (1997).

87. *Id.* at 438.

trucks.<sup>88</sup> These vehicles are exempt from CAFE. A simple and effective means of reducing carbon dioxide emissions would be to apply CAFE standards to these aesthetically-challenged vehicles. The fact that automobile manufacturers do not support this approach raises the question of whether they have an alternative motivation for supporting the tax credit idea.

Following a change in regulations which favored a certain type of equipment (in this case fuel efficient vehicles and machines to build them) companies that have tough to replace equipment, will be in a much worse position than companies that are already poised to upgrade to lower emitting equipment. Smaller competitors may also have trouble overcoming the fixed cost barriers of installing new equipment. It may also discourage companies from entering the market because this type of legislation favors economies of scale.<sup>89</sup> This may explain the recent shift in the auto industry, particularly Ford, towards the support of expenditures for the development of alternative fuel vehicles. Ford has almost fully developed the hydrogen fuel cell and has already introduced the EV1. A tax credit for research and development of alternative power sources may be used by companies like Ford to complete research they would have done anyway, and the credit to individuals who purchase energy efficient cars should stimulate sales of new cars in a market which is increasingly turning to used cars and cutting the profit margins of automobile manufacturers. Automobile manufacturers are also aware of the fact that fossil fuels are a commodity with a limited supply. Within several decades as fossil fuels become more scarce, their price will go up. This will cause a reduction in driving and a decrease in the purchases of new cars as cars will be a less favored means of transportation. Even were this not the case, the glut of used cars on the market provides automobile manufacturers with an additional incentive to change the fuel supply. Like the drivers of diesel cars, current owners of petroleum powered cars may be pressured to upgrade where it is difficult and expensive to procure fuel for their vehicle. The claims of two prominent automo-

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88. See *Id.* at note 21 (noting that minivans, SUVs, and light trucks compose approximately one-half of the automobile market and 40% of new vehicle sales in the United States).

89. Michael J. Casey, *Economic and Tax Incentives for a Cleaner Environment: A Survey of Marketable Pollution Permits and Pollution Taxes*, 1 DICK. J. ENVTL. L. & POL'Y 40 (1992).

bile industry executives appear to bolster the "business motive" hypothesis:

As General Motors Chair and CEO John F. Smith said recently in announcing GM's plans to step up research spending and focus on bringing new products to the market, "no car company will be able to thrive in the 21st century if it relies solely on internal combustion engines." And as William C. Ford, Jr., Chair of Ford's Finance Committee, also said in announcing that Ford will join with Daimler-Benz of Germany in developing cars with fuel-cell engines, "there's a compelling business case to be made."<sup>90</sup>

Policy makers must be careful not create subsidies where none are needed. Such windfalls may help garner support for these proposals in Congress among big companies poised to step to green technologies anyway.

The motivations of the automobile industry become particularly suspect where past taxes on automobiles, based on emissions, indicate that while they have been somewhat effective in improving fuel economy, false reporting procedures have been used by the automobile industry to avoid the tax.<sup>91</sup> The use of direct expenditures through federal agencies should help to limit this problem, although as Zelinski points out, agencies may lack a strong incentive to monitor behavior and monitoring by agencies is not always perfect. The large tax expenditure outlays for "energy-efficient building equipment" may pose a more serious compliance problem, a problem which covers many industries not just the automobile industry. To help alleviate this problem in the automobile industry and in other industries intimately tied to carbon dioxide emissions, IRS audits should be undertaken of all serious players in the emissions game. Penalties for non-compliance should be stiff to create a larger disincentive, particularly where Congress may be unwilling to increase the size of the IRS, or the EPA under a coordinated effort or direct expenditure approach.<sup>92</sup>

The importance of industry as a special interest in the carbon dioxide emissions debate should not be overlooked. The failure of the Clinton Btu tax was due in large part to lobbying against the proposal by industrial groups.<sup>93</sup> Thus it was a lack of political backing rather than economic design flaws which prevented the

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90. Eizenstat, *supra* note 75, at 13.

91. Westin, *supra* note 22, at 350.

92. Christian, *supra* note 68, at 275.

93. Lee, *supra* note 47, at 78.

Btu Tax from being enacted.<sup>94</sup> The failure of the Btu tax does not bode well for a meaningful reduction in carbon dioxide emissions under Kyoto. CCTI may fare better however. Because the program avoids taxes and co-opts industry by giving them tax credits and research and development money, this special interest group will tend to lend a hand to the initiative.

#### ENVIRONMENTALISTS AND GREENS

Al Gore is a staunch environmentalist with firm convictions supporting action to halt global warming. Compared with many supporters of the Democratic Party who identify themselves as "Greens", Gore is a lightweight. While many other interests have received economic "rents" as a result of the CCTI, the "Greens" consider the agreement itself the return. For this subset of "the public" care of Mother Earth is a matter of quasi-religious ceremony and for this group of "political" environmentalists preventing climate change is not only an end in itself, it is also a means to an end — a means to reducing fossil fuel consumption, preventing deforestation, and reducing the rate of general consumption and development.<sup>95</sup> More importantly, the CCTI is a strong first step towards compliance with the Kyoto Agreement, an international solution to the warming crisis. The Kyoto Agreement is designed to generate sharing and cooperation between nations, with the mighty developed nations helping out less developed nations, perhaps giving back what many members of this faction feel the developed nations have wrongfully taken from them, with a mutually beneficial result of preventing the earth from scorching. Following the path of Venus, this group thrives on feeling, the sustenance of liberalism.

The United States has incurred a heavy obligation under the Kyoto Treaty. Meeting the original Kyoto goal to reduce emission levels in the U.S. to 1990 levels by 2010 would require a carbon tax of \$125 per metric ton of carbon. Estimates state that this would raise electricity prices by 32 percent nationwide (46 percent for industrial groups). Venusian supporters stated that this increased cost could be a boon because it would prompt U.S. firms to seek to reduce emissions in other countries so that they could reduce the cost here. It would also force development of

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94. *Pollution Tax Forum: Colloquim*, 12 PACE ENVTL. L. REV. 1, 3 (1994).

95. Michaelson, *supra* note 64, at 137.

alternative energy sources.<sup>96</sup> The American Petroleum Institute did not agree and argued that a \$200 per ton tax would be required to reduce carbon emissions to current levels by the year 2020. The institute further argued that such a tax would cause a 1.7% decline in the U.S. GNP.<sup>97</sup> Such statistics are not encouraging to politicians.

Lack of encouragement notwithstanding, environment friendly reduction negotiators ignored Mars and his constituents at the API and bound the United States to an even tougher obligation at Kyoto — to reduce emissions of heat-trapping gasses to 7 percent below 1990 levels by 2008 to 2012.<sup>98</sup> Senior White House economic advisor Janet Yellen said that implementing the Kyoto treaty would cause the average household energy bill in the U.S. to rise by 3-5% (\$70-\$100) and would push up the price of gasoline by 3-4%. She also stated that this rise in energy costs would not have a significant effect on industry where energy accounts for only 2.2% of expenditures. Her testimony was met with skepticism in Congress and a number of lobbyists from various groups<sup>99</sup> who claimed that the Treaty could reduce the U.S. GDP by several percentage points and put the U.S. at a competitive disadvantage relative to developing nations.<sup>100</sup>

On the global level climate change is an institutionally and economically difficult problem to address. Reducing fossil fuel consumption and deforestation could radically alter the economic and social fabric of “Northern” industrialized countries and stunt the growth “Southern” developing countries. Increasing population levels in developing countries and the spread of industrialization will continue to cause a sharp rise in global carbon dioxide levels.<sup>101</sup> Therefore the support of all countries is necessary to achieve a significant slow down in warming. Beyond a countries’ industrial status a quick note should be made of the importance of their geography in determining their position on warming. While many countries would suffer from rising sea levels and a warmer climate, some nations (parts of the Soviet

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96. Joseph F. Schuler, Jr., *Power Plant Emissions Climate Change at the Stack: Posturing Toward Kyoto*, 135 NO. 15 PUB. UTIL. FORT. 20, 25 (1997).

97. Richard A. Westin, *supra* note 22, at 342.

98. Bruce Clark, 3/5/98 Fin. Times 3, *Administration Upbeat on Cost of Kyoto Treaty*, 1998 WL 3537471.

99. Including United States based oil, power, and manufacturing groups as well as labour unions and agricultural lobbies.

100. *Id.*

101. Driesen, *supra* note 65, at 570.

Union for example) stand to gain more arable land and beach-front property.<sup>102</sup> This fact compounds the political difficulty in getting nations to cooperate in reducing emissions. Even in a situation where all parties stood to lose as a result of warming there would still be a tragedy of the commons problem to the extent that the economic and political cost to any one country of reducing carbon dioxide emissions would not be outweighed by the slight reduction in global warming to that nation. To the extent that some nations would suffer a cooperator's loss, i.e. they are better off with warming, inducing them to agree to or comply with a global warming treaty is likely to be very difficult.<sup>103</sup>

To help align the interests of these various parties a strategy of "joint implementation" has been developed. The most recent incarnation of "joint implementation" the "Clean Development Mechanism" was proposed by Brazil and backed by the United States and the Alliance of Small Island States<sup>104</sup>. This mechanism employs a system of global carbon emissions credits limiting the amount of carbon dioxide each country can emit. These units would then be bid on by businesses operating within each country. A business from a developed nation, where carbon dioxide emissions are high, could help a company in a less developed country implement and construct high technology, environmentally friendly plants and equipment in exchange for an increase in their allowance of carbon emissions in an amount equal to the amount they save.<sup>105</sup> The outcome of this system would depend on the initial allocations of carbon emissions rights. Under any initial allocation the net effect will be to transfer alternative energy technology to less developed countries while achieving some level of reduction in carbon dioxide emissions. The primary stakeholders in the fight over a joint implementation system, and the initial allocations of emissions rights, are business interests (particularly multi-national corporations), the United States, *Annex I* (i.e. first world) countries, second world countries, and developing nations.

In the context of a global treaty a global command and control regime may be technically impossible to administer thus the cooperative "Joint Implementation" strategy will likely be adopted — a strategy which could save hundreds of billions of dollars per

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102. Casey, *supra* note 90, at 40.

103. Michaelson, *supra* note 64, at 79.

104. Understandably not on the cooperator's loss team.

105. Eizenstat, *supra* note 75, at 7.

year.<sup>106</sup> This strategy, exemplified by the “Clean Development Mechanism” provides the “Greens” with a feeling that global cooperation and equity — which demands that developing countries receive some return for saving their carbon sinks (i.e. rainforests)<sup>107</sup>, limiting their population size, and foregoing living at a consumptive level equal to that of many Annex I countries<sup>108</sup> — are being furthered.

#### IV.

##### CONCLUSION

##### PREDICTIONS BASED ON THE FISCAL YEAR 1999

##### PROPOSED BUDGET

Enough interest groups seemed aligned at the time of the Fiscal Year 1999 Proposed Budget to allow Clinton to succeed in passing the Climate Change Technology Initiative. By skillfully giving “tax expenditure” dollars to individuals and businesses, by supplying research and development money through existing federal agencies to powerful interests in energy and industry, and by giving legislators funding to take back to their states, he had given something to all powerful economic interests involved. He had also managed to generate work for his supporters working for the federal government while providing jobs for the powerful interest groups of tax lawyers, accountants, and CPA’s. Even the “Green” faction captures its rent, albeit non-economic, through legislation that promotes internationally responsible behavior that is nourishing to the environment.

While giving out “rents” to these various interests, the proposed legislation was skillfully drafted to avoid direct penalties

106. Forsheit, *supra* note 54, at 710.

107. Under Kyoto, industry may trade technology with undeveloped countries for emissions credits and may also plant carbon sinks, i.e. trees, to increase their credit allowances. See also “Joint Implementation” above. Joseph F. Schuler, Jr., *Power Plant Emissions Climate Change at the Stack: Posturing Toward Kyoto*, 135 NO. 15 PUB. UTIL. FORT. 20, 28 (1997).

108. Henry Shue, *After You: May Action by the Rich be Contingent Upon Action by the Poor?* 1 IND. J. GLOBAL LEGAL STUD. 343, 346 (1994) citing Thomas E. Drennen, *Economic Development and Climate Change: Analyzing the International Response* at 142 (1993) (unpublished Ph.D. dissertation, Cornell University) (reporting that “industrialized countries, with 15.7% of the global population, emit 48.5% of the carbon, while developing countries (not including China), with 51.9% of the population, emit 14.9% of the carbon. China accounts for 23.5% of the people and 10.3% of the carbon [this figure is rising rapidly], while the Commonwealth of Independent States and Eastern Europe have 8.8% of the people and 26.2% of the carbon”).

on any interest. The fact that the tobacco-settlement is the proposed funding mechanism is an illusory, this money could be used elsewhere, but effective means of providing funding without demonstrating harm to any program or the Fisc. Zelinski's view of the political process as a pluralistic system where regulations are sought after as means to procuring economic rents and where the means chosen, direct or tax expenditures, are the means most likely to maximize the rents of these special interest groups is strongly supported by the study of the design of the Climate Change Technology Initiative.

RETROSPECTIVE: A BRIEF GLIMPSE AT THE SUCCESS OF THE CCTI AS OF THE PROPOSED BUDGET FOR FISCAL YEAR 2000

The original CCTI, embodied in Clinton's proposed Budget for Fiscal Year 1999 was passed in part.<sup>109</sup> A substantial portion of the funding for the direct expenditure programs was given, while the tax credit incentives went largely unfunded.<sup>110</sup> A comparison of the chart below with the proposed agency allocation chart, in the introductory portion of this comment, demonstrates the magnitude of the mitigation of the full proposal:

FUNDING ALLOCATION FOR THE CCTI  
(millions)

	1998 Actual	1999 Estimate	2000 Proposed	Dollars Change: 1999 to 2000	Percent Change: 1999 to 2000
Climate Change Technology Initiative (DOE, EPA, USDA, DOC, HUD):	819	1,021	1,751	+730	+71%
Spending	(819)	(1,021)	(1,368)	(+347)	(+34%)
Tax Incentives			(383)	(+383)	(NA)

In part the plan's failure to be fully adopted was the result of criticism from the Office of Management and Budget. At a June 4, 1998 hearing, Victor Rezendes, Director of Energy Resources and Science Issues for GAO, criticized the plan, stating that the CCTI failed to quantify greenhouse gas reductions under the program and failed provide any details on how the various entities involved, particularly the federal agencies, would coordinate

109. Proposed Budget of the United States, Fiscal Year 2000, Office of Management and Budget (1999) <<http://wais.access.gpo.gov>>.

110. Those tax incentives for the environment that were expanded were not done so under the rubric of the CCTI. One such credit is a \$4000 credit for the purchase of a fuel efficient vehicle.

their activities.<sup>111</sup> The critical GAO analysis provided leverage for opponents of the plan in the legislature. The House and Senate Appropriations committees made cuts in the plan to the energy efficiency programs and the carbon reduction technologies programs. While GAO skepticism about the solvency of the plan made this task easier, opponents of the plan, primarily Republicans, also stated their belief that climate change was not a substantial enough problem to warrant the level of expenditure proposed.<sup>112</sup> Opponents taking this position stressed that the plan was an attempt to implement the Kyoto protocol without getting formal ratification, a politically untenable process, from Congress.<sup>113</sup>

The outcome of a pared down CCTI passing without many of the tax expenditures provides support for the role interest groups play in the republic. Ideologically, the move to pare down an internationally focused, and potentially economically damaging, plan without clear goals, tracks well with the common sense and frequently protectionist ideology of many Republicans. For staunch Republicans striking down the CCTI generates a utility similar to the passage of the bill for the "Greens."<sup>114</sup> For less right wing Republicans, the failure of the CCTI is a service to the their constituencies – just as the passage of the bill would be a service to many democratic constituents.

Underlying the party divide, the fact that the tax expenditures in particular failed to pass while many of the research and development expenditures went through provides support for Zelinski's faith in the power of varied interest groups to impact legislation in order to capture rents. The direct expenditure programs directly benefited a large number of government employees,<sup>115</sup> as well as industry groups who benefited from research

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111. American Association for the Advancement of Science, *Congress, GAO Consider President's Global Climate Change Plan*, SCIENCE & TECHNOLOGY IN CONGRESS, July 1998 <<http://www2.scienceupdate.com/spp/dspp/cstc/bulletin/articles/7-98/gcc.htm>>.

112. *Id.*

113. H. Josef Hebert, *\$4B Sought to Combat Global Warming*, ASSOCIATED PRESS, January 26, 1999 <<http://www.cop5.org/jan99/fourbill.htm>>.

114. Members of the Republican right tend to favor state's rights and would likely approve, as a matter of ideology, to the grant money given to states under the CCTI. Therefore the interest of the states can be seen acting indirectly on the Republican leadership to mitigate some of the ideological opposition to the CCTI, paving the way for interest groups lobbying for the CCTI to press their case.

115. Particularly in the Environmental Protection Agency and the Department of Energy.

assistance.<sup>116</sup> These groups were able to put up sufficient resistance to Republican resistance to the program to get the portions that benefited them passed. Because the beneficiaries of the tax credits were more diffuse<sup>117</sup> they were unable to lobby to get the portions of the CCTI favoring them passed.

In spite of their failure to be widely implemented in 1999, tax credits are back this year, along with a hefty increase in funding for the research and development side of the CCTI.<sup>118</sup> The president's proposed Fiscal Year 2000 Climate Change Budget is a \$4.1 billion effort to reduce global warming and represents a 34% increase over last year's budget.<sup>119</sup> In addition to an expansion in research and development money, the same tax credits – along with a few new additions – are back on the table.<sup>120</sup> Public choice theory and history predict that the tax credits are not likely to pass as they still lack a focused constituency to support them. The expansion in research and development money is likely to be granted as the various specific beneficiaries lobby vigorously for them. Time will provide the proof in this next small chapter on the role of interest groups in shaping our laws.

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116. The automobile industry in particular received substantial money and resources through direct expenditures. The power industry also received a substantial amount of money for clean energy research through the Department of Energy.

117. Potential consumers of solar roofs have few means, and only a mild incentive for banding together. The same is true with consumers of fuel efficient automobiles, and note that both the energy industry and auto manufacturers are at best indifferent to the idea. Likewise, consumers of energy efficient homes and energy efficient building equipment are unlikely to have the means or motivation to form a powerful enough interest to force components of the CCTI favorable to them through. Tax credits supporting wind and biomass electricity generation were allowed, benefiting such facilities through July 1, 1999. Perhaps this narrow allowance is testimony to the fact the these alternative energy providers, in contrast to potential consumers of energy efficient goods, were readily identifiable enough and had enough of a *vested* interest to garner some support for the components of the CCTI favoring their business.

118. See the report by the Department of Energy evaluating the likely efficacy of the various tax credit proposals put forward by the proposed Fiscal Year 2000 Budget at <<http://www.eia.doe.gov/oiaf/climate99/tax.html>>.

119. Catherine E. Howard, *White House Releases FY2000 Climate Change Budget Proposal*, WEATHERVANE, February 5, 1999 <<http://www.weathervane.rff.org/features/feature058.html>>.

120. See the report discussed in *supra* note 118 for a discussion of these tax credits.

