

Analysis of Transportation-Sector Policy Selection and Policy Preference Expressed in State Climate Action Planning Processes

Extended Abstract #25

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INTRODUCTION

In order for greenhouse gas reduction (GHG) strategies to be effective in a practical sense, they must meet a number of requirements beyond simply demonstrating an emissions reduction potential on paper. In particular, strategies must be politically acceptable to the communities and interest groups affected by them. In the transportation sector, a great many policies have been proposed which show great promise as paths to energy efficiency and lower emissions, but face significant political-acceptance hurdles. Strategies which price road use or which divert significant travel from single-occupancy vehicles to more efficient modes such as transit are two such effective but politically challenged approaches. Understanding which policies attract more political support (or, at a minimum, less political opposition) is important in order to design overall GHG-reduction approaches which have a reasonable prospect of actual implementation.

This presentation will address the political acceptability of a wide range of GHG-reduction strategies through a survey of revealed preferences expressed in eleven recent state climate action plans. These were completed in Arizona, Colorado, Florida, Kentucky, Iowa, Maryland, Michigan, Minnesota, New York, North Carolina and South Carolina. In the past decade, 34 states have completed some form of climate action planning process. These processes are generally designed to set a greenhouse-gas reduction target and then identify collections of policies that will help to achieve that overall goal. In each of several sectors (generally including transportation, agriculture, buildings, and energy supply), the policy selection process usually involves the creation of a specialized Technical Working Group, the job of which is to select and define the best policies and oversee a quantitative analysis of those policies' potential to reduce GHG emissions. These working groups are usually made up of state employees, industry representatives and advocacy group leaders. This work has been led and/or coordinated by teams working for the Center for Climate Strategies (CCS), whose policy selection process has been, and continues to be, applied consistently from state to state.

DISCUSSION OF POLICY SELECTION

Center for Climate Strategies Process

The present stakeholder process followed by the Center for Climate Strategies (CCS) has been successfully used in about 20 state climate change planning efforts and has to date included a combined total of over 1,500 stakeholders and technical work group experts across all geographic regions and economic sectors. The development and analysis of policy options

occurs at two levels. The higher level is carried out by a commission, council or advisory group composed of governor-appointed representatives of groups, interests and parties that have a direct stake in the effects of climate change or efforts to mitigate them. The detailed analysis is done by sector-focused Technical Working Groups (TWGs) or subcommittees made up of members of the commission plus other individuals with particular expertise in the topic area of focus for the TWG.

In most state climate action plan development processes, five TWGs are formed to facilitate the quantification and evaluation of various GHG mitigation policy options. These TWGs cover the areas of Transportation and Land Use, but also four others: Energy Supply, Residential, Commercial and Industrial; Agriculture, Forestry and Waste, and finally a group focused on Cross-Cutting Issues, which examine opportunities for emissions mitigation across sectors.

The identification, design and analysis of policy option recommendations in the states' action planning processes involves an extended process, the key components of which are as follows:

- Develop a full catalog of potential climate action strategies for each sector
- Narrow down the catalog to approximately ten favored options, using criteria such as expected emissions reduction potential, expected cost or cost-effectiveness, and the presence of possible co-benefits beyond emissions reduction
- Develop and finalize policy design parameters for each strategy
- Quantification of projected emissions reductions as well as the costs and benefits likely to issue from implementation of the policies
- Approval of the policy selection and quantified policy impacts by the TWG, and then by the commission.

In each state, stakeholders selected approximately ten transportation-related strategies for analysis.

Stakeholders in the Transportation and Land-Use Sector

The stakeholders that have an interest in vehicles range from automobile manufacturers through to the consumers, who are users of the automobiles. The state planning processes have included automakers, auto-dealers, auto associations (ie AAA), transportation planners, researchers and business persons involved in specific automotive technologies, and environmental and other non-governmental organizations that have an interest in the impact of automobile use on society.

The stakeholders that have an interest in fuels range from fuel producing companies, distributors, and wholesale and retail sellers of transportation fuels, research and development organizations (including universities) that are involved in development of alternative fuels, advocates for alternative fuel use, including environmental and agricultural interests, and end users of the fuels.

The stakeholders involved in travel activity tend to be weighted toward public agencies and the stakeholders involved with public agencies, including state and local departments of transportation and public works, transportation planning and funding agencies, and representatives of cities and counties, ranging from large urban areas to suburban cities and

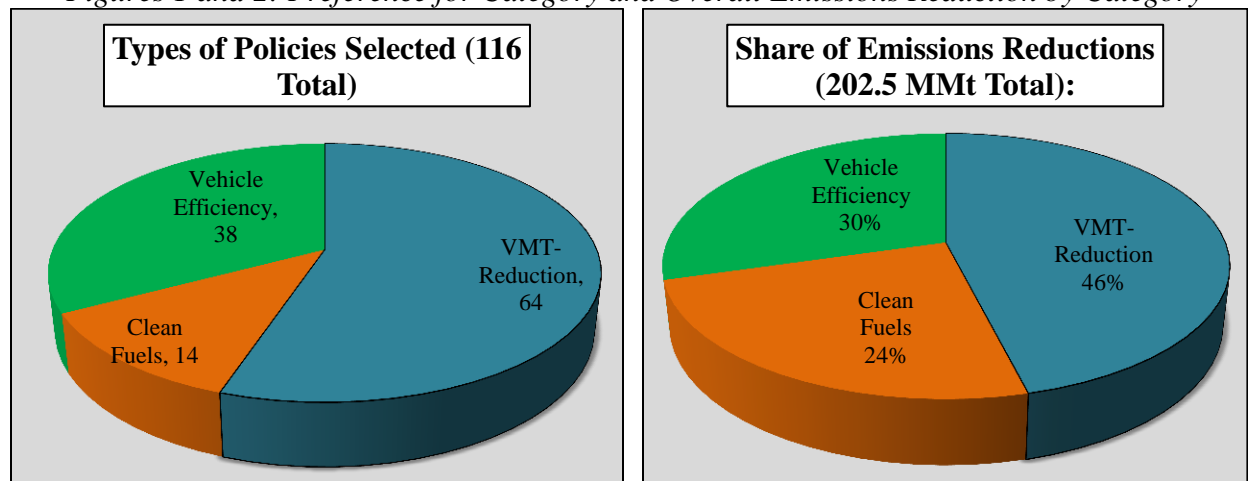
smaller towns. The stakeholders on travel activity side also include such non-governmental organizations as advocates for environmental, public transportation, and smart growth perspectives. Some interest groups can also include union representatives, representatives of senior citizen, lower income, or other groups who have a significant stake in the choices available for travel, other than the automobile.

Observed policy selection

The analysis reviewed eleven of the most recent climate action planning processes, completed in the states of Arizona, Colorado, Florida, Kentucky, Iowa, Maryland, Michigan, Minnesota, New York, North Carolina and South Carolina. In total, these states selected 116 greenhouse gas reduction strategies for the transportation sector, and developed emissions reduction estimates for 94 of those strategies.

Emissions reduction strategies generally fall into one of three separate categories, often called the “three legs of the stool.” These categories are VMT reduction, vehicle efficiency, and fuel carbon intensity. Among these three categories, VMT-reduction strategies proved most popular. Clean fuels strategies, selected only 14 out of 116 times, had comparatively high GHG-reduction potentials when compared against vehicle-efficiency and VMT-reduction strategies.

Figures 1 and 2: Preference for Category and Overall Emissions Reduction by Category



Within each group, notable policies were often repeatedly selected as part of these plans. More than half of all VMT-related strategies were oriented toward urban design strategies, such as the development of “smart growth” urban design approaches and the building or expansion of alternate modes of travel such as biking, walking or transit. Less common were incentive-based policies, such as policies to encourage carpooling or policies that used tolls and parking pricing to encourage or discourage specific types of trips. VMT policies affecting freight, such as the shifting of freight to rail or the reduction of heavy-duty travel were selected very rarely – only six of the 64 VMT strategies dealt with freight.

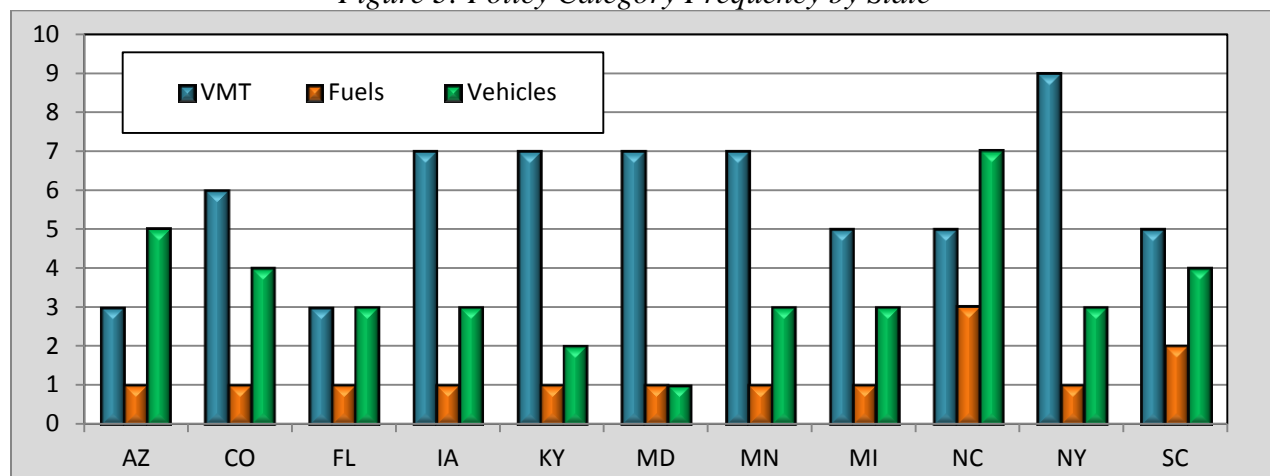
With regard to vehicle-efficiency policies, incentive policies have proven more popular than direct regulations, which were themselves more popular than policies targeting the efficiency of

the heavy-duty fleet. Incentives such as “feebates,” which combine a fee on gas-guzzling vehicles with a rebate for highly efficient vehicles, represented half (or 19 of 38) such policies, while outright regulations represented 12 policies and truck- or bus-related policies numbered only seven.

With regard to clean-fuels policies, most policies have shied away from selecting a specific fuel for inclusion into the fuel mix. More common are performance-based standards such as low-carbon fuel standards and low-greenhouse-gas fuel standards, which impose a carbon intensity target without establishing floors or caps on the use of any specific fuel. Such policies were selected ten of 14 times, while specific alternative fuels (always ethanol and/or biodiesel) were the focus of policies only four times.

Some states clearly preferred one category over the others, while other states selected more evenly. The following figure displays the number of policies in each category selected by each state. Most states selected only one clean-fuels policy, either a biofuels scenario or a low-carbon fuel standard.

Figure 3: Policy Category Frequency by State



Costs and Cost-Effectiveness

Averages for both the cost-effectiveness (measured as the cost or savings per ton of emissions reduced) and the emissions reduction potential varied widely, and simple averages hide this variation. The following three figures show how policies varied within each category in terms of both effectiveness and cost-effectiveness. To normalize for comparison the reduction effects of strategies from both small and large states, GHG reduction values are measured as percentages of total GHG forecast to occur before any policy impacts, and are taken for the final year of analysis in each state. Figures are limited to the strategies for which cost data was available.

Figure 3A: Projected Impacts of VMT Policy Selections

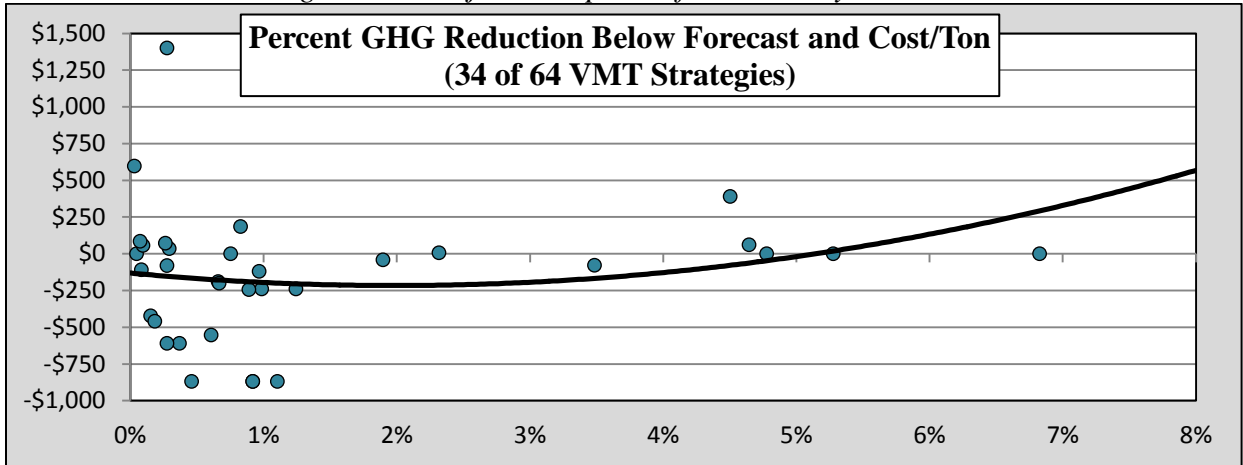


Figure 3B: Projected Impacts of Vehicle-Efficiency Policy Selections

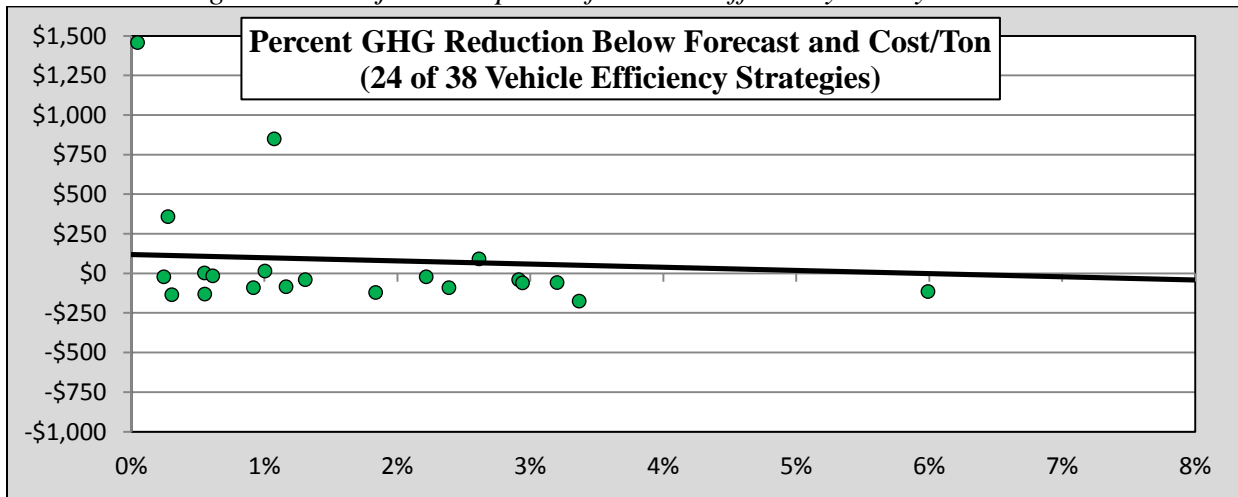
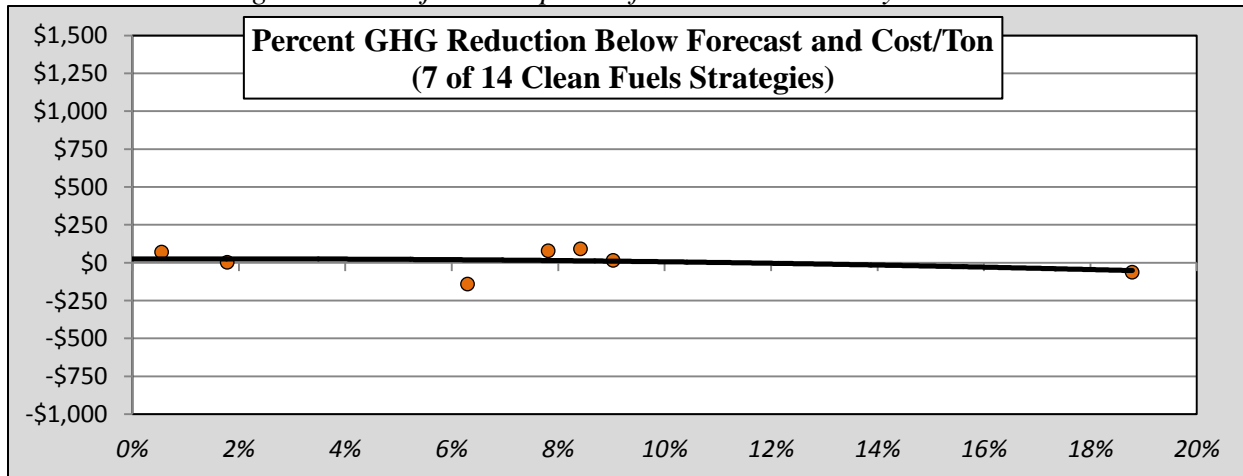


Figure 3C: Projected Impacts of Clean-Fuels Policy Selections



CONCLUSION

The stakeholder process provides some insight into the political acceptability of policies to reduce greenhouse gas emissions from the transportation sector. This survey appears to reveal a preference for planning-level policies, such as urban design and smart growth, which are complex and face significant political and procedural hurdles. These include expansion of transit, development of “complete streets” which put multiple types of land use in close proximity in order to reduce trip length and increase walkability.

Policies which do not appear include many familiar ideas: additional direct taxes on fuels, tolls, or taxes on mileage. Also rare are policies encouraging or mandating the use of biofuels, hybrids or electric vehicles. Fees similar to taxes do appear, however, in the form of parking pricing and congestion pricing, both of which usually involve new charges paid by the driving public. Incentives, by contrast, are popular: mileage-based insurance appears in several state climate action plans, as do incentives (sometimes paired with taxes) for the purchase of more fuel-efficient vehicles.

Keywords

Greenhouse Gas Reduction, Travel Demand, VMT Reduction, Transportation, Clean Fuels, Fuel Efficiency, Political Acceptability

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REFERENCES

1. Arizona Climate Change Advisory Group. *Arizona Climate Change Action Plan, Appendix I: Transportation and Land Use*. Available online at <http://azclimatechange.gov/download/O40F9298.pdf>.
2. Colorado Climate Project. *Climate Action Panel Final Report, Chapter 5: Transportation and Land Use*. Available online at <http://www.coloradoclimate.org/ewebeditpro/items/O14F13861.pdf>
3. Florida Governor’s Action Team on Energy and Climate Change. *Final Report: Chapter 5: Transportation and Land Use*. Available online at <http://www.flclimatechange.us/ewebeditpro/items/O12F20143.PDF>.

4. Kentucky Climate Action Planning Council. *Transportation and Land Use Policy Option Document*. Available online at <http://www.kyclimatechange.us/ewebeditpro/items/O122F24858.pdf>
5. Iowa Climate Change Advisory Council. *Final Report, Appendix H: Transportation and Land Use Sectors – Policy Options*. Available online at <http://www.iaclimatechange.us/ewebeditpro/items/O90F20690.pdf>
6. Maryland Commission on Climate Change. *TLU Policy Options Document*. Available online at <http://www.mdclimatechange.us/ewebeditpro/items/O40F17102.pdf>
7. Michigan Climate Action Council. *Final Report, Chapter 6 – Transportation and Land Use Sector*. Available online at <http://www.miclimatechange.us/ewebeditpro/items/O46F21189.pdf>.
8. Minnesota Climate Change Advisory Group. *Final Report, Appendix H: Transportation and Land Use – Policy Recommendations*. Available online at <http://www.mnclimatechange.us/ewebeditpro/items/O3F16760.pdf>
9. New York State Climate Action Council. *TLU Policy Option Document*. Available online at <http://www.nyclimatechange.us/ewebeditpro/items/O109F24273.pdf>.
10. North Carolina Climate Action Plan Advisory Group. *Chapter 5 – Transportation and Land Use*. Available at <http://www.ncclimatechange.us/ewebeditpro/items/O120F16965.pdf>.
11. South Carolina Climate, Energy and Commerce Advisory Committee. *Chapter 6 – Transportation and Land Use*. Available at <http://www.scclimatechange.us/ewebeditpro/items/O60F19047.pdf>.