

Financial Services Update

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Greetings from Financial Services:

The focus of this update is the relationship between transportation and greenhouse gas emissions. While the issue of air emissions goes considerably beyond the transportation sector, it is nevertheless the target for a significant part of the policy debate. The dimensions of the problem and policy options are sketched out here for the transport sector only. A forthcoming white paper will lay out the issues for transportation in more detail.

As always, we welcome your comments and suggestions on these and other issues of importance to the Department. Please email us through:

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Transportation and Greenhouse Gas Emissions

Scientific consensus suggests that greenhouse gases such as carbon dioxide, methane, and nitrous oxide are responsible for changing climate conditions and global warming. Carbon dioxide is the most common of these greenhouse gases (GHGs), making up 84% of Oregon's emissions. In fact, Oregon produced nearly 68 million metric tons of carbon dioxide-equivalent in 2000. This is nearly enough to fill Crater Lake twice over! Our transportation sector accounts for about 38% of these emissions and is surpassed only by the electricity generation sector. Although emissions per vehicle mile traveled (VMT) have decreased slightly since 1990, total transportation sector emissions have been increasing steadily, but have been flat or even declining when put on a normalized basis (see chart below).

There is considerable uncertainty over the linkages between GHG emissions and changes in the climate globally. Notwithstanding, failure to study and model the phenomenon is not a good option given the long lead times involved to resolve the issues. The analogy with an insurance policy is very *apropos* here: one buys it hoping it is not needed. Given that the combustion of hydrocarbons is the source of virtually all GHGs, and that the transportation sector (across all modes) is largely propelled by fossil fuels, it is relevant to examine measures aimed at curbing emissions if only on the basis

of the Clean Air Act and overall human health aspects.

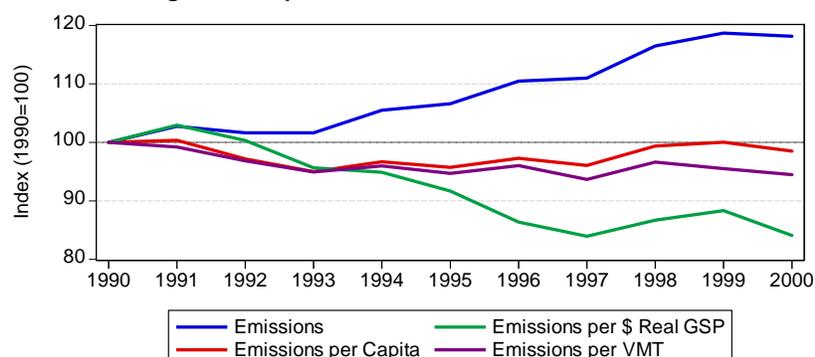
Policy Options

The foremost principle should be to "price" transportation (all modes) at more socially optimal levels. Take automobiles, for example, to understand what this means. GHGs would be lower if drivers bore the full social costs they create, rather than just the personal ownership and operating costs of their cars (including fees and taxes to fund the highway system). These private costs do not account for the social costs of pollution and congestion. In other words, if drivers were paying full costs, they would drive less in favor of alternative forms of travel and, as a result, emit fewer pollutants.

While there is a substantial array of policy options available to reduce GHG emissions, they can generally be segmented into two general groups. One is "standards" whereby strict regulation mandates the quantity of emissions allowed. Several examples of these have been widely adopted:

Tougher new vehicle standards for emissions and fuel economy, such as the federal Corporate Average Fuel Economy (CAFE) standards for light vehicles. Manufacturers must improve vehicles to meet these tighter standards, but this can be

Oregon Transportation Sector Carbon Dioxide Emissions



Oregon's Goals for Greenhouse Gas Emissions

In 2004, the Governor's Advisory Group on Global Warming convened to set broad emissions goals and make recommendations for achieving them. These goals span:

- (1) By 2010, stop the increase in greenhouse gas emissions and begin to reduce carbon dioxide emissions to 1990 levels,
- (2) By 2020, attain a 10% reduction relative to 1990 emissions levels, and
- (3) By 2050, achieve "climate stabilization" at 75% below 1990 levels.

Financial Services is a branch of ODOT's Central Services Division. Financial Services provides centralized accounting, financial reporting, payroll and benefits, budget development, economic and financial analysis, business planning, debt administration, cash management, the Oregon Transportation Infrastructure Bank, tax collection and auditing, revenue forecasting, tax policy analysis and cost allocation services.

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expensive and much of the cost is passed on to consumers. Increasing the cost of new vehicles slows the fleet replacement rate because some consumers may delay purchasing a new vehicle and buy older vintages instead. As a result, this approach could reduce emissions more slowly than anticipated.

Vehicle inspection programs, such as that operated by the state's Department of Environmental Quality (DEQ) in the Portland and Medford areas. Under this program, vehicles are inspected to determine the amount they pollute. Owners of failing vehicles are required to make repairs, spending up to a maximum dollar amount to fix the problem. These programs are costly to run, place a financial burden on low-income individuals who may drive older, higher-emissions vehicles, and may suffer from elements of fraud and abuse.

The second group of options includes "market-based" approaches that rely on economic incentives rather than strict standards to encourage emissions-reducing behavior. For example, most of these methods increase the cost of emitting GHGs and thereby encourage individuals to pollute less. Examples of market-based methods include:

Vehicle fees, whereby motorists are charged a fee for the pollution their vehicle is capable of generating. One example for doing this is to establish climate-friendly vehicle title transfer and registration fees similar to those recommended by the Governor's Advisory Group on Global Warming. Under such a system, low emission vehicles such as hybrids would pay lower fees. Such fee incentives, however, do nothing to alter the demand for accessing the network and the spending needed to sustain its capability.

Fuel taxes. Because emissions generally increase in direct proportion to the amount of

fuel used, they can be reduced by using fuels taxes to increase the price of fuel. Another instrument could be to lower fuel taxes for alternative fuels that burn cleaner. However, just as for fee incentives, this does nothing to alter usage demands placed on the transportation system and the resource needs for sustaining it.

Income tax credits. Oregon currently has two income tax credits that promote the purchase of hybrids or alternative fuel vehicles. Individuals can receive a credit of up to \$1,500 for buying a qualifying new vehicle. A similar tax credit is available for businesses. These credits encourage people to purchase low emission vehicles by effectively reducing their price. Unlike emissions-based registration fees or fuel tax incentives, these credits do not divert needed resources away from the State Highway Fund.

Finally, there is the possibility of a hybrid of strict standards and market-based options. A cap and emissions permit trading system would typify a hybrid approach.

Which approach is best?

According to the Congressional Budget Office, market-based methods can reduce emissions with greater flexibility and lower costs than strict standards. Choosing among these policies is difficult. For example, some approaches are costly to administer. Others are at best only indirect instruments, creating distortions to efficient resource allocation, and are not effective. The table below offers a qualitative comparison of some of the policy instruments at our disposal to curb GHG emissions. The dots indicate the how adverse or deleterious the probable impacts are in the context of four key dimensions. For example, the costs of standards are generally regarded as more substantial than they are for income tax credits or fuel taxes.

POLICY INSTRUMENT	Implementation & Administration Costs	Impact on the State Highway Fund	Impact on Low-Income Individuals	Possibility of Failing Emissions Targets
Strict Standards				
New Vehicle Standards	●	●	●	●
Inspection Programs	●	●	●	●
Market-based Approaches				
Vehicle Fees	●	●	●	●
Fuel Taxes	●	●	●	●
Income Tax Credits	●	●	●	●

● = High ● = Moderate ● = Low