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# Proposed Carbon Tax for the State of California

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## Specific Legislative Proposal

The proposed carbon tax will be a tax on the carbon content of fossil fuels (gas, diesel, jet fuel) used in surface and air transportation and measured in terms of carbon dioxide equivalent (CO<sub>2</sub>e). Air and surface transportation sectors represent between 40% and 50% of carbon emissions in California.

The proposed tax rate is \$20 per ton of carbon dioxide equivalent, which equates to an estimated \$0.19 per gallon. While this is well below the estimated social cost of carbon<sup>1</sup>, it should help spur carbon-reducing investment and a shift to low-carbon behavior. The relatively modest increase in retail prices should also be acceptable to consumers.

Estimated revenues from the carbon tax are \$5 to \$10 billion per year. The revenues generated from the carbon tax will go to the General Fund with an as-yet undetermined portion dedicated to increasing the earned income tax credit for lower income households.

## Background

A carbon tax is the most efficient way to convey the true social cost of carbon emissions via price signals and spur carbon-reducing investment and low-carbon behavior.

A carbon tax is a tax levied on the emissions of carbon dioxide and other greenhouse gases. In addition to creating incentives for energy conservation, a broad-based carbon tax would approximate the true social cost of fossil fuels and put renewable energy sources such as wind, solar and geothermal on a more competitive footing.

A carbon tax is also an indirect tax which has the benefit of being less politically offensive than direct taxes like income taxes and certainly much less distortionary.<sup>2</sup> Unlike most taxes (i.e. income, payroll), which are economically inefficient because they discourage economic activity, so-called “Pigovian” taxes (taxes on gas and carbon and other negative externalities) actually increase the efficiency of the market and the economy by correcting a market failure.

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<sup>1</sup> The social cost of carbon (SCC), expressed in terms of future net benefits and costs that are discounted to the present, in peer-reviewed estimates for 2005 have an average value of US\$43 per tonne of carbon (tC) (i.e., US\$12 per tonne of carbon dioxide) but the range around this mean is large. For example, in a survey of 100 estimates, the values ran from US\$–10 per tonne of carbon (US\$–3 per tonne of carbon dioxide) up to US\$350/tC (US\$95 per tonne of carbon dioxide.)

<sup>2</sup> Carbon atoms are present in every fossil fuel (coal, oil and gas) and are released as CO<sub>2</sub> when they are burnt. In contrast, non-combustion energy sources—wind, sunlight, hydropower, and nuclear—do not convert hydrocarbons to carbon dioxide. Accordingly, a carbon tax is effectively a tax on the use of fossil fuels, and only fossil fuels. Some carbon tax proposals include other greenhouse gases measured in units of tonnes of carbon dioxide equivalent.

Implementing a carbon tax would have benefits well beyond the obvious environmental benefits in the form of lower taxes in the future, assuming some revenues go to offset the current budget deficit and pay down debt.

### *Implementation*

A carbon tax on the surface and air transportation sectors has the benefit of being relatively easy to implement from an administrative perspective.

The government sets a price per ton on carbon or carbon dioxide equivalent, then translates it into a tax on gas, diesel and fuel oil. Because the proposed carbon tax makes using dirty transportation fuels more expensive, it will encourage 'carbon-shifting' behavior and, thus, reduce consumption and increase energy-efficient transportation modes (i.e. a shift to mass transit).

Administratively, the proposed carbon tax is essentially a fuels tax and is an easy tax to administer. For surface transport, the tax would be imposed through the same mechanism now used for the state excise tax. For airlines, it would be only slightly more complicated. To minimize leakage, a one to two-person office could monitor flights, passengers, and destinations in order to calculate fuel burn, or to just use fuel "need" documentation that airlines must calculate for every flight in their flight plan or similar documentation.

A carbon tax as proposed herein could be implemented either as a stand alone pollution tax or alongside a carbon tax and trade system (either state or region-wide, or, ideally, a national cap and trade system). The advantage of the proposed tax as a complementary policy is that the expected price on carbon under a cap and trade regime is not going to be high enough to drive change in the transportation sector. Even the proposed carbon tax on its own is probably not high enough to drive significant changes in household transportation decision-making. But a cap and trade system and a carbon tax as proposed on fuels would bring about the kind of changes in household decision-making that would help the nation and state reach its greenhouse gas emission reduction goals.

In California, where transportation represents a much greater percentage of carbon emissions than it does nationwide, this would represent an important step forward in addressing the externalities in the transportation sector. Furthermore, California is not planning to include transportation fuels in the cap and trade system until 2015, so a carbon tax could help fill this gap and drive transportation sector changes in the meantime.

## *Carbon Tax Revenues*

We estimate carbon tax revenues of \$5 to \$10 billion per year with a carbon tax of \$20 per ton of CO<sub>2</sub>e. The revenues generated from the carbon tax will go to the General Fund to help offset the state's current budget deficit, with an as-yet undetermined portion dedicated to increasing the earned income tax credit for lower income households.

By using some revenue to offset taxes paid by lower income households and fund the budget deficit, the proposed carbon tax program will address the regressivity issue and create an additional benefit over and above the environmental benefit. Specifically, the carbon tax will reduce the economic cost that income taxes impose on the economy and reduce the deficit. Personal and corporate income taxes and payroll taxes distort, or reduce, the efficiency of an economy, because they reduce incentives to work, save or invest. By reducing the deficit, the carbon tax will pay for reductions in future taxes, because a smaller state deficit lowers the government's future interest costs, resulting in less tax revenue in the future to pay for interest on state debt.

## *Potential Concerns*

Regressivity is a major economic and political concern. Most middle- and low-income households spend a larger percentage of their income on gasoline (and other fuels and electricity) than do wealthy households. The top 20% of U.S. households spend just 2.3% of their after-tax income on gasoline; the percentage for the lowest "quintile," 9.1%, is four times as high. Clearly, imposing a gasoline tax or, by implication, a carbon tax, *without tax-shifting or an earned income tax credit*, would have a disproportionate percentage impact on lower-income families. However, as noted above, this issue can be addressed in part through the targeted use of tax revenues.

From an environmental standpoint, the major concern is over the certainty of emissions reductions. Since a carbon tax relies on a price signal rather than an emissions cap to discourage carbon emissions, the carbon tax program would not provide a guaranteed quantity of emission reductions. Over time, the tax could be increased in order to induce a greater reduction in carbon emissions, but without a high degree of certainty of the actual outcome. Implementing the tax in conjunction with a cap and trade program could help address this issue.

Concerns about 'carbon leakage', the tendency for energy-intensive industries such as energy generation or manufacturing to migrate from states with a carbon tax to those without a carbon tax, would be mitigated under the proposed carbon tax. Transportation is one of the most carbon-intensive sectors, but with the least tendency to cause 'leakage'. The transportation sector cannot be moved to other states or regions with lower energy costs, and fuels for use in California are generally purchased in-state. Air transportation and trucking could cause some problems, as operators could make an effort to purchase fuel outside of California, but this issue can be fairly easily mitigated, monitored and controlled.

### *Support and Precedents*

The carbon tax has the support of a broad array of industry leaders, economists and environmentalists (see Carbon Center website for complete list<sup>3</sup>). Last December, Rex Tillerson, the CEO of Exxonmobil, supported the idea of a carbon tax. He also said that he hoped that the revenues from a carbon tax would be used to lower other taxes.

Because of the link with global warming, a carbon tax is sometimes assumed to require an international administration, but that is not necessary. The EU considered a carbon tax covering its member states prior to starting its version of cap and trading in 2005, but many EU countries have enacted their own carbon tax programs and other countries are following their lead.<sup>4</sup>

Different forms of gas or fuel taxes, which are a type of carbon tax, exist in many countries and many states in the U.S.

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<sup>3</sup> <http://www.carboncenter.org>

<sup>4</sup> Numerous EU countries have a carbon tax. In 1991, Sweden enacted a carbon tax, placing a tax of \$100 per ton on the use of oil, coal, natural gas, and other fossil fuels used in domestic travel. Industrial users paid 25-50% of the rate, and certain high-energy industries such as commercial horticulture, mining, manufacturing, pulp and paper industry were fully exempted. In 1997 Sweden raised the tax to \$150 per ton of CO<sub>2</sub> and raised it again in 2007.

Finland, the Netherlands and Norway also introduced carbon taxes in the 1990s. Finland was the first to introduce the tax, even though it emits only 0.3 per cent of the world's carbon emissions. In 1993, the UK imposed the Fuel Price Escalator, an incrementally-increasing tax on retail petroleum. Italy introduced a carbon tax in 1998.

In February of 2008, British Columbia became the first jurisdiction in North America to implement a carbon tax of 2.4 cents per liter at the pump. Unlike previous proposals, legislation will keep the pending carbon tax revenue neutral by reducing corporate and income taxes at an equivalent rate.