

The costs and impacts of three proposed carbon tax bills

By Todd Myers, Director, Center for the Environment

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Key findings

1. Legislators have proposed three versions of a carbon tax, ranging from imposing a simple carbon tax to a complex and bureaucratic cap-and-trade system.
2. SB 5971 would create a carbon tax of \$15 per metric ton of CO₂ and would cost a two-car household between \$207 and \$280 a year.
3. A carbon tax and rebate proposal being developed by Rep. Shewmake would cost about \$130 to \$180 annually for a two-car household, increasing to between \$352 and \$487 after five years. It would also provide a rebate to taxpayers based on revenue collected, which, in some cases would eliminate the cost completely.
4. SB 5981 would create a cap-and-trade system similar to the one used in California. It would cost a two-car household between \$221 and \$306 per year, increasing to \$325 to \$450 in 2025.
5. Two bills are tied to arbitrary CO₂ reduction targets. As a result, taxes could increase significantly beyond what economists say is an appropriate price for CO₂ reduction.
6. The cap-and-trade proposal would use tax money to pay favored special interests and fund carbon reduction projects which not be required to meet a standard of effectiveness.
7. Cap-and-trade systems are also notoriously volatile. Washington's electricity-related CO₂ emissions can vary by more than 50 percent year-to-year, dramatically increasing taxes during low-snowpack years.
8. Two of the proposals have complicated systems to reduce the impact on energy-intensive, trade-exposed industries.
9. Those systems, however, require a level of accuracy that is simply not possible and have failed in other places they have been tried.
10. Although the best of the potential CO₂ reduction policies, revenue-neutral carbon taxes are hindered because the systems can easily be changed to increase taxes and there is little trust that legislators will stick to promises of revenue neutrality.
11. Personal technology and empowering families and businesses to be more efficient is the best way to reduce CO₂ emissions.
12. Any CO₂ reduction legislation should also include strict effectiveness requirements, preventing the state from spending money on projects that cost more than \$20 to reduce one metric ton of CO₂.

Last November, for the second time in three years, Washington voters strongly rejected a carbon-tax ballot initiative even as they elected legislators who are more likely to support putting a tax on carbon emissions. Some in the Washington State Legislature have ignored the first message and focused on the second and have proposed three new carbon taxes this year. Each proposal is slightly different, and Governor Inslee even argued that one of them – imposing a straight tax on carbon – does not actually count as action on climate change.

The proposals have a number of problems from a policy standpoint. Rather than making the policy simpler and clearer, two of the proposed carbon taxes are complex. All of them would increase the cost of energy in Washington state.

The policies being proposed suffer from both political and policy shortcomings. Legislators should require state efforts to be effective and rely more on improving personal

energy-saving efforts and less on costly and ineffective bureaucratic approaches.

The three proposals

Three different versions of carbon-tax proposal have been introduced in the legislative session. The first is Senate Bill 5971, proposed by Senator Steve Hobbs (D – Lake Stevens). The bill would raise a number of fees, but most notably it would increase gas taxes and put a tax on CO₂ emissions. The bill is a simple tax increase and would spend the revenue collected on a variety of projects. The combination of the six-cent-per-gallon gas tax and the \$15 per metric ton of CO₂ (MT/CO₂) carbon tax would add about 19 cents per gallon to the cost of gas. The bill would also impose a \$10 per MT/CO₂ carbon tax on home heating and electricity.

Although carbon taxes and gas taxes function in similar ways when it comes to raising the cost of a gallon of gas, they are treated differently by the state constitution. Gas tax revenues are protected by the 18th Amendment to the state constitution and must be used for building and improving public roads. Carbon taxes, however, are not protected and could be spent on any purpose the Legislature chooses.

The second proposal is a cap-and-trade system, Senate Bill 5981, proposed by Senator Reuven Carlyle (D – Seattle). A cap-and-trade system puts a limit on the amount of CO₂ that can be emitted by covered entities, requiring them to pay government agencies for permits to emit CO₂. The system is more complex than a carbon tax, but costs are generally passed along to consumers in a similar fashion. Like a carbon tax, the prices government charges for permits in a cap-and-trade system are denominated in dollars per metric ton of CO₂. For example, California's cap-and-trade system currently sells permits for \$15.62 MT/CO₂, which is a bit more than 13 cents per gallon.

The proposed legislation would spend the taxes on a number of projects, ranging from CO₂ reduction efforts to social-justice programs as defined by an “Environmental and economic justice panel” created by the bill. In many ways the legislation is very similar

to the initiative voters just rejected, Initiative 1631, substituting “cap-and-trade” for a carbon tax.

The final proposal is a hybrid of carbon tax and cap-and-trade, proposed by Rep. Sharon Shewmake (D – Bellingham). The bill would impose a tax of \$10/MT CO₂ starting on July 1, 2020, and then increase the tax by 20 percent each year. The tax would continue to increase until officials at the Department of Ecology decided state emissions are on track to meet certain pre-determined CO₂ reduction targets. The tax would increase from about nine cents per gallon in 2020 to about 20 cents per gallon in 2025. A portion of the money collected would be returned to Washington residents as a rebate. The rebate amount would be the same for everyone and would act as a universal basic income entitlement program.

Rather than a straight carbon tax, like Sen. Hobbs' proposal, under this legislation state officials would give out tradable permits to energy-intensive, trade-exposed industries, based on a number of benchmarks. Rather than simply exempting these industries, as is done in other proposals, the bill would require them to reduce their emissions, but it would provide some flexibility to meet their obligations. For example, it would allow covered industries to invest in carbon-reduction projects, sometimes called “offsets.” Offsets can be an effective and efficient way to reduce emissions. They are often far less expensive and return more CO₂ reduction per dollar than other top-down regulatory approaches, like a low-carbon fuel standard.

The system, however, has risks because it relies on the ability of government agency staff to be able to accurately project into the future the ability of an industry to reduce emissions, its impact on worldwide competitiveness, and worldwide markets. It is worth noting that as of the end of March 2019, officials at the Department of Ecology had not yet released final CO₂ emissions data for 2016. The record of a state agencies in accurately predicting future economic trends, when it struggles to release data that are two years old, is poor.

The politics undermining sound policy

These three bills represent a wide range of approaches, ranging from imposing a simple carbon tax to enforcing a cap-and-trade system requiring heavy government management and control. Each system would impose a different potential cost to consumers and would incur different risks. Each of these bills is a product of the politics of climate policy during the past three years, and their provisions are more influenced by special interest politics than effective climate economics.

For example, during the hearing on SB 5981, Senator Carlyle and Senator Palumbo (D – Maltby) chided the opponents of the cap-and-trade proposal who said they would support a carbon price but were against this legislation. The senators noted that many of these same organizations opposed last year's carbon tax proposal and had opposed Initiative 1631.

The same, however, could be said of Senate Democrats themselves, who did not even hold a vote on the carbon tax proposed in the 2018 legislative session, despite having majority control. The same is true of House Democrats, who have not voted on a single carbon tax proposal in the last six years, despite holding majority control in each of those years.

It could also be said of environmental activists, who opposed the 2016 revenue-neutral carbon tax ballot initiative, Initiative 732, because it would not have raised overall taxes and not given the money to favored special interests. Finally, it could also be said of Washington state voters, who, despite telling pollsters they support reducing CO₂ emissions, have overwhelmingly voted against both carbon tax proposals. Even Governor Inslee, who says carbon reduction is a top priority, told reporters that Sen. Hobbs's carbon tax bill does not count as a CO₂ reduction policy.

Dogmatism, rather than effectiveness, has been driving our climate policy debate. The result has been a failure to enact meaningful climate policy because politics and promises to special interests have blocked the crafting of a simple and effective climate policy. As a result of the desire of politicians to satisfy special

interests, there are several problems with the policies that have been proposed.

The cost of each proposal

Each of the three proposals would increase taxes on Washington state residents. The carbon tax proposals of Sen. Hobbs (SB 5971) and Rep. Shewmake have specific carbon tax rates written into the legislation and household costs can be estimated. Although Sen. Carlyle's cap-and-trade legislation does not set a specific tax rate in the legislation, the bill's goal is for Washington to become part of California's cap-and-trade system, so we can use the current price there as an estimate of initial household cost for Washington residents.

For SB 5971 carbon tax bill, setting aside some of the fees that would be imposed by the legislation, the annual cost for a two-car family in Washington state would range between \$207 and \$280 per year.

Rep. Shewmake's legislation would start at a lower tax level initially but would increase rapidly. For the first year, the annual estimated household cost would be between \$130 and \$180 for a two-car household. After only five years, however, it would jump to between \$352 and \$487 per year.

This would increase the price of a gallon of gas by nine cents per gallon in 2020 for consumers, increasing to 24 cents per gallon in 2025. Some of all of that could be rebated to households depending on the funding available in the fund created by the bill. It is unclear, then, how much the legislation would cost the average household, but it would be less than the amounts shown above for the early years.

Using the California price to estimate the cost for SB 5981, Sen. Carlyle's cap-and-trade bill, we can start with the current price

of \$15.73. The price has increased about eight percent in each of the last two years.¹

Assuming an eight percent annual increase, the initial price would be \$16.99 per MT/CO₂ in 2020, increasing to \$24.96 per MT/CO₂ in 2025. The per-household cost would begin at \$221 to \$306 per year and would increase to \$325.24 to \$450 annually by 2025. This would add about 15 cents in taxes to the cost of a gallon of gas in the first year, increasing to 22 cents per gallon in 2025. This would amount to about \$60 more in gas taxes per car in 2020, increasing to \$90 more per car per year in 2025.

Are carbon taxes effective?

Reducing CO₂ emissions is only one aspect of each of the proposed carbon taxes. All of them are designed to increase people's total tax burden and raise money for other projects in addition to creating a price incentive to conserve carbon-based fuels. Each proposal takes a different approach to reducing CO₂ emissions.

Sen. Hobbs' bill would put a simple added tax on gasoline and home heating oil. The revenue would be used for transportation-related projects, including repairing fish culverts as required by a federal judge. The reduction in CO₂ emissions would use simple market principles – if you increase the price of something, people will buy less of it.

The elasticity of demand for gasoline is greater in the medium and long term than in the near term, which means it may take time for people to adjust to the prices. However, people will find ways to conserve, by purchasing more fuel-efficient vehicles, making fewer unnecessary trips, carpooling, telecommuting, and using other techniques that are suited to their income level and lifestyle.

Some on the left object to simple carbon taxes because they feel there is no guarantee that CO₂ reduction targets would be achieved.

The other carbon tax proposals deal with this concern in two ways.

Rep. Shewmake's legislation would tie the price of CO₂ to achieving the government's targets, increasing the cost rapidly until officials at the Department of Ecology decide the targets will be achieved. This means the price of CO₂ could increase significantly before state agency staff decided to cap it.

Additionally, agency staff would have no incentive to cap rising tax increases. If agency staff cap the carbon tax and the state subsequently misses the pre-determined targets, staff will be asked why they prematurely stopped the increases. If, however, they allow the tax increases to continue and the state overshoots the targets, rather than being challenged, staff would be rewarded for going the extra step to fight perceived climate change, even if they harmed families.

The carbon tax and rebate bill also would encourage those who received rebates to spend them on CO₂-reduction projects, including insulation, solar panels, and energy audits. Finally, it would allow entities required to pay the tax to invest in carbon-reduction projects. This is a way to reduce CO₂ emissions at a cost lower than the tax rate, but the bill puts very strict limits on this method of effectively reducing CO₂.

Finally, SB 5981, the cap-and-trade legislation, is the most strict and would put limits on the total amount of CO₂ emitted by covered entities and would reduce that limit annually to meet targets set by the Legislature. It would also use some of the revenue to pay for carbon-reduction projects.

There would be no limit, however, on the cost of those projects, and the legislation says the projects would not be chosen based on effectiveness at reducing CO₂, but only after considering a range of issues, including the concerns of special interests. The legislation would track data about each project, including the cost to reduce a MT of CO₂. While useful,

1 California Air Resources Board, "Summary of Auction Settlement Prices and Results," February 2019, at https://www.arb.ca.gov/cc/capandtrade/auction/results_summary.pdf

however, that would not be used as a decision metric.

When considering carbon investments, the legislation says they must offer, “direct environmental benefits in this state while prioritizing projects that benefit highly impacted communities, Indian tribes, and natural and working lands.”²

The panel deciding the guidelines for carbon investments would include only one “carbon market expert,” but it would include a union representative, a member of the environmental and economic justice panel, a tribal representative, and both a “conservation advocate,” and an “environmental advocate,” without describing the difference between the two. Rather than emphasizing CO₂ reduction, the guidelines in the legislation focus mostly on subjective judgments about non-CO₂ benefits.

Both pieces of legislation are tied to arbitrary CO₂ reduction targets, arguing these targets are necessary to achieve certain temperature goals. Neither piece of legislation ties the cost of CO₂ reductions to the benefits of CO₂ reduction.

Nobel Prize winner William Nordhaus notes the optimal price for a MT of CO₂ is \$36.³ By way of contrast, he notes it would cost \$236/MT CO₂ to reach the 1.5-degree Celsius goal some in the Legislature are targeting. The cost of meeting that target would be extremely high, costing about ten times as much as the environmental benefits it would provide. Using unrealistic CO₂-reduction targets virtually guarantees the cost of carbon reduction would be higher than the benefits it would provide.

Cap-and-trade’s volatility

Unlike direct carbon taxes, cap-and-trade systems are notoriously volatile. In the Northeast United States, the price of a

permit for emitting a short ton⁴ of CO₂ in the Regional Greenhouse Gas Initiative (RGGI), has increased from \$3.79 in February 2018, to \$5.27 in February of 2019, a rise of 39 percent in one year.⁵ In California, the price of a permit for a MT of CO₂ increased from \$14.61 to \$15.73 in one year, an increase of about eight percent.⁶ California’s carbon price increased by a similar percentage in 2017 as well.

The nature of Washington’s electricity base would add to that volatility. Much of our electricity is generated by hydroelectric power that relies on the annual snowpack. In high-snowpack years, we have a steady supply of CO₂-free energy. In low-snowpack years, however, Washington’s utilities must turn to alternative power generation, primarily natural gas, which increases CO₂ emissions. Facing strict emissions caps, this could significantly increase the price of CO₂ permits.

The period between 2010 and 2014 is instructive. In 2010, Washington state’s electricity generation emitted an average of 298 pounds of CO₂ per megawatt hour.⁷ In 2011, however, thanks to a high-snowpack year,⁸ the carbon-intensity of our emissions was cut nearly in half, falling to only 157 lbs/MWh. It fell even further in 2012, to 132 lbs/MWh. Then it jumped up to 242 lbs/MWh in 2013, nearly doubling in one year.

The increase from 2012 to 2013 accounted for about six percent of all emissions in the state in 2013. That is about three times the annual required reduction in the proposed cap-and-trade system. Put another way, instead of power utilities having to reduce two million metric tons of CO₂ in a year to meet

2 SB 5981, “Implementing a greenhouse gas emissions cap and trade program,” <https://app.leg.wa.gov/billsummary?BillNumber=5981&Year=2019&Initiative=false>

3 Nordhaus, William, “Climate Change: The Ultimate Challenge for Economics,” December 8, 2018, <https://www.nobelprize.org/uploads/2018/10/nordhaus-slides.pdf>

4 Unlike every other market in the world, RGGI sells permits for short tons of CO₂, which is about 10 percent less than a metric ton.

5 Regional Greenhouse Gas Initiative, “Auction Results,” <https://www.rggi.org/auctions/auction-results>

6 California Air Resources Board, “Summary of Auction Settlement Prices and Results,” February 2019, https://www.arb.ca.gov/cc/capandtrade/auction/results_summary.pdf

7 Energy Information Administration, “State Electricity Profiles,” <https://www.eia.gov/electricity/state/>

8 Natural Resources Conservation Service, “Washington SNOTEL Snow/Precipitation Update Report,” <https://wcc.sc.egov.usda.gov/reports/SelectUpdateReport.html>

the cap, they would have to reduce it by eight million metric tons for that year.

To address this potential volatility, the cap-and-trade proposal would allow CO2 emitters to bank credits, using emission credits saved from past years for current obligations. This can help smooth out annual differences, but it would also require emitters to speculate on the carbon market.

Volatility can also be mitigated by connecting to a larger market, such as California's cap-and-trade system. The bill specifically encourages joining other markets. Connecting to other markets, however, would mean Washington has less control over how it treats energy-intensive, trade-exposed industries, and how the market works. Rather than California changing its existing rules to meet Washington's desires and political pressures, we would most likely have to adapt our rules to comply with theirs.

This would not only reduce flexibility in setting our rules at the outset, it would also make it difficult to adjust rules in the future should our energy-intensive, trade-exposed industries find the costs of production are too high in Washington state, resulting in economic hardship and job losses. For example, when German industries found they were losing market share due to the high cost of energy, the government stepped in and allocated free credits. That may not be allowed for Washington companies if we are required to follow California's rules.

Complications favor the rich

Finally, both Rep. Shewmake's legislation and the cap-and-trade system (SB 5981) are very complex, which invites gaming by industries and other corporations. For example, the cap-and-trade legislation says the rules should be set to "mitigate leakage by covered entities in energy intensive, trade-exposed processes."

Leakage means that industries would leave Washington state due to the high cost of CO2 due to complying with any new emissions laws, but would operate elsewhere in the world, emitting the same amount of CO2 in the process. The legislation then says the rules

should not allocate any more permits than are "necessary to mitigate leakage." So, the rules must target only the amount of CO2 reduction necessary to prevent companies from leaving, but no more. The chance that state agency staff can pinpoint this amount accurately is virtually zero.

Further, the people who know the most about their industry and worldwide competition – the emitters – are likely to argue for the maximum amount of protection from CO2 reduction requirements. The CO2 reduction targets would still have to be met, meaning costs would be passed along to others. The ability of those who emit CO2 to avoid, or even profit, from the rules is related to the ability of corporations to lobby agency staff and policymakers.

Although complexity is sold as a way to deal with unpredictability, it is false security. The United Kingdom system had flexibility that officials promised would protect trade-exposed industries like Tata Steel. Just weeks after meeting with Governor Inslee in 2016 to show how they were reducing CO2 emissions while remaining competitive, company executives announced bankruptcy and closed their U.K. manufacturing plant.

This failure is not the fault of agency staff. Industry experts also have difficulty predicting the future of markets. Indeed, Tata Steel sent its representatives on a tour to highlight their competitiveness not long before they were forced to close their own plant.

Although SB 5981 says officials at the Department of Commerce must, "adopt a rule establishing objective numerical criteria for both emissions intensity and trade exposure," regarding EITEs, this is simply not possible for anyone inside or especially outside an industry. Any objective standard is likely to be inaccurate and politically influenced and would change rapidly.

Alternative approach to reducing CO2 emissions

We can take steps to reduce CO2 emission in Washington state and worldwide, but policies should focus on effectiveness and should shift power from government agencies

to individuals who have incentives to become more energy efficient. Here are four options.

First, we should require any public money the state spends on reducing CO2 emissions to be spent effectively. There are many existing efforts that can reduce or avoid a MT of CO2 for about \$5. By way of contrast, the proposed low-carbon fuel standard in the Legislature this year would cost about \$190 to reduce one MT of CO2. This is not only wasteful economically, it wastes opportunity to reduce environmental impact. The state should require that their own agencies spend no more than \$20 to reduce one MT of CO2.

Second, policies should put power in the hands of individuals and companies rather than using prescriptive regulation and subsidies to increase the power of public agencies. Individuals have skin in the game and if they are ineffective at reducing their energy use, they pay the price in the form of higher gas and electricity bills. Individuals and company managers know best how to become more efficient, and they should be the focus of our policymaking.

Unfortunately, we are moving in the opposite direction because past efforts have failed. That failure, however, has come primarily because politicians and interest groups have been unwilling to compromise, which has prevented any policy from being adopted. That political failure is now a policy failure as the state turns to regulations that are much more expensive and ineffective.

Third, we have more opportunities to engage people using technology. Solutions like smart thermostats, car sharing, and voluntary purchases of renewable energy are all undervalued by government as approaches to reduce CO2 emissions. Voluntary purchases of renewables increase the total amount

of renewable energy in the state without imposing additional costs on working families.

Car sharing in Seattle has already reduced the number of vehicles on city roads by about 9,000 cars.⁹ Smart thermostats have been more effective at reducing energy use than government-promoted smart meters.¹⁰ The impact of these efforts is modest now because such approaches have been sidelined by politics or regulation. The opportunity to engage individuals to reduce CO2 emissions using personal technology has grown rapidly over the past five years and should be part of our policy approach.

Finally, although much of the discussion of climate change in politics these days diverges widely from IPCC science and sound economics, there are policies that can reduce CO2 emissions effectively without damaging our economy and putting control in the hands of people, not government. Reducing subsidies for politically favored and wasteful approaches for electric vehicles and solar panels would reduce state spending.

The state should also reduce regulatory requirements that add cost but do little to cut emissions. In that circumstance, putting a price on carbon while cutting other taxes would increase the incentive to become more energy efficient without increasing taxes and regulations on families and businesses. Individuals would have more control over their tax bill and businesses would be less subject to job-killing regulations.

There is a major problem with this approach: the public does not believe politicians will stick to their promises. Although polls show Washington residents support taking steps to reduce CO2 emissions, they continually oppose carbon taxes, even revenue-neutral carbon taxes. The fear that politicians will promise the public revenue

9 MyNorthwest.com, "More than 9K Seattle drivers have given up personal vehicles for car shares," September 1, 2016, at <http://mynorthwest.com/255175/more-than-9k-seattle-drivers-have-given-up-personal-vehicles-for-car-shares/>

10 Nexant and Research Into Action, "California Statewide Op-in Time-of-Use Pricing Pilot," March 30, 2018, at <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457172>

neutrality but will raise taxes later is not unfounded.

In the 2019 legislative session, legislators are supporting a low-carbon fuel standard (LCFS) despite an agreement a few years ago that new transportation funding would be contingent on a promise not to impose an LCFS. Legislators now argue they are not bound by agreements made by politicians years ago.¹¹ Legally, that is true, but it means that any policy promise made today is not binding. The inability of politicians to keep their word (or the fact that they never intended to do so), undermines the ability to craft good public policy because the minute political circumstances are right, all past pledges go out the window.

Although Rep. Shewmake's legislation seeks to return much of the increased taxes it would impose to Washington state drivers and electricity users, that promise could be repealed by any future legislature with a simple majority vote. What began as a minor tax increase to reduce carbon emissions could quickly become a large one with legislators spending the revenue however they see fit.

This is a significant reason the Washington Policy Center turned to personal approaches to promote energy efficiency. People with skin in the game will find ways to reduce their costs no matter who is in office in Olympia or Washington D.C. Personal efforts to cut energy use are durable in a way that political promises are not. With the rapid improvement of personal technology, those options are more available and effective than ever.

Conclusion

Despite overwhelming rejection twice by state voters, legislators are again attempting to pass new carbon taxes. The systems being proposed would increase costs for households up to \$300 in early years and would increase each year after that. Additionally, although the proposals attempt to protect jobs and economically exposed industries, the rules provide false security. Similar efforts elsewhere

have not adequately protected workers in energy-intensive businesses.

For Washington state to effectively and efficiently reduce CO2 emissions, we need to add strict metrics for state expenditures, to ensure they are effective. We need to put more power in the hands of individuals, promoting personal technology solutions rather than more government regulation. If public policy is going to play a role in reducing CO2 emissions, politicians will have to create structures that prevent the political whims of the day from undermining past promises. Until that happens, Washington politicians will likely again fail to find effective and durable ways to cut CO2 emissions in our state.

Todd Myers is the director of Washington Policy Center's Center for the Environment

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¹¹ Myers, Todd, WPC, "A deal is not a deal on climate policy," February 14, 2019, at <https://www.washingtonpolicy.org/publications/detail/a-deal-is-not-a-deal-on-climate-policy>