Comments on Washington State Climate Commitment Act
Eric Strid
June 25, 2022

Thank you for the opportunity to comment on rule making for the Climate Commitment Act (CCA).

Summary

1. The CCA will not significantly reduce Washington state emissions. The idea that a cap-and-trade system with wide sectoral coverage and politically feasible allowance prices will drive deep emission reductions is fantasy and unsupported by empirical evidence.
2. Ecology could develop CCA rules that generate relatively consistent revenues, such as rules to collar allowance prices such that the system mostly functions like a carbon tax. This is a useful option if the overriding priority is to fund projects, but limited allowance prices will not result in significant emission reductions.
3. In any case, the political opposition to higher taxes, especially for low-margin small businesses dependent on fuel usage (such as small farms or agricultural businesses) may require pragmatic exemptions. Such opposition is more likely in rural Washington, where consumers and businesses want cheaper energy and more resilient energy. They emphatically don't want more expensive energy, especially with diesel at $6 per gallon now.
4. The next legislature should direct one or more state agencies to develop a comprehensive, long-term energy and emissions plan for the state that achieves the 2030, 2040, and 2050 emission goals. This should end the uncoordinated proposals for ineffective or incremental emission policies. There are now world-class, open-source modeling tools available that provide rapid policy analyses and a common database for all stakeholders.
5. Recommendations for emissions of EITE industries depend on the type of industry.

1. The Climate Commitment Act (CCA) will not significantly reduce Washington state emissions.

A simple data point: the past year of rising petroleum prices is an excellent test of the impacts of a GHG tax around $200 per MTCO2e (adding about $2 per gallon) on demand for gasoline or diesel. The recent EIA data shows less than 10% change in consumption in the US, confirming what we learned in the 1970s--that fuel prices are highly inelastic. We will buy fuel as necessary to travel

to work, shop, or visit family. If $200 per ton has no clear impact on our largest emissions segment, then why would $20 or $50 per ton?

Ecology's summary touts CCA as Washington's most important emissions policy in a "comprehensive approach" (Figure 1). I disagree that the approach is comprehensive, since the only CCA mechanism to cut emissions is by driving up the auction prices of allowances. Are allowance prices >$200/MTCO2e practical? It is obvious that fuel distributors will simply pass the allowance costs onto consumers. This is not rocket science.

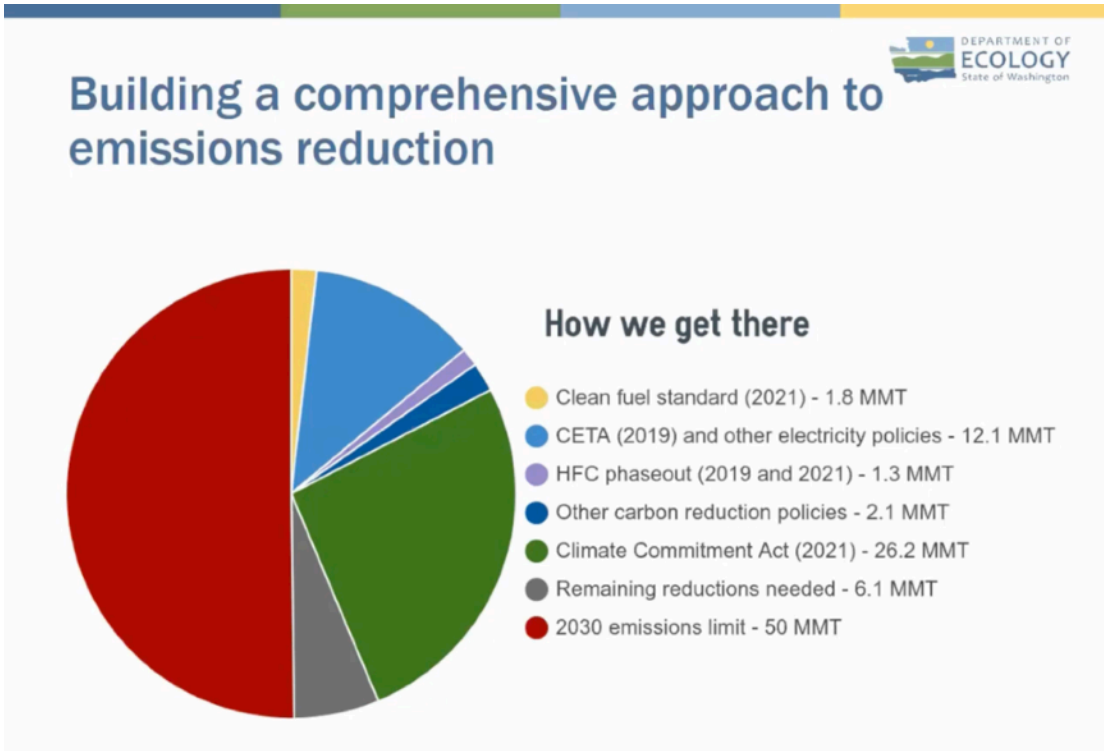

Figure 1. Ecology's expected emission reductions in 2030. More than half the reductions are assumed to result from the CCA.

Noting that other jurisdictions have been using cap-and-trade systems avoids the question of their efficacy. A major problem with cap-and-trade is that the cap necessarily interacts with other emissions policies—when another policy or a change in market demand decreases or increases demand for allowances, the allowance price can dramatically drop or rise unless the cap is adjusted. For example, the state's recent commercial building code that bans new natural gas hookups reduces demand for the proposed allowances.

And in all cases the emissions contribution of the cap-and-trade system vs other policy or market factors is difficult to separate. For example, opinions on the impact of RGGI range from 50% of the reductions to "arguably negligible."

2. **Ecology could develop CCA rules that generate relatively consistent revenues, but such rules would likely collar allowance prices such that the system mostly functions like a carbon tax.**

A common feature of cap-and-trade systems is a price "collar" that restricts the auction price to a minimum or maximum price. If the auction price hits either the minimum or maximum, the effect is identical to a carbon tax at that price. A carbon tax does not constrain the number of allowances. You can't have it both ways—either the price is high enough to cut demand, or the price is limited and the cap is exceeded. (Options for banking allowances can mitigate this, but only for a short period. Cutting emissions by 50% is not a small, short-term change.)

If the top priority of CCA is to fund projects, then collaring the auction prices makes sense. If the top priority is to reduce emissions, then additional, more effective policies are necessary.

Dedicating 50% of the revenues to disadvantaged communities is a good policy, but the CCA allowances do not define where pollution is allowed or not. This has been an issue with California's cap-and-trade system, dubbed by some EJ groups as "pay-to-pollute."

3. **The political opposition to higher taxes may require pragmatic exemptions.**

Whether or not price collars are adopted, the political opposition to higher taxes will correctly label CCA as another tax, and point out that much higher energy taxes are likely if the allowance price is intended to reduce emissions. Meanwhile, rural Washington wants cheaper energy and more resilient energy. So CCA will only increase the rural-urban political divide, as Oregon famously demonstrated.

Instead of increasing energy prices, the cost trajectories of clean energy are decreasing energy prices. Remember incandescent light bulbs? It's now cheaper to build and operate a wind or solar farm than it is to operate a coal or nuclear plant in an increasing portion of the US. Electric cars have been cheaper to own for years, the up-front cost of electric cars will reach parity with gasoline or diesel cars around 2025, and light trucks will reach parity before 2030. Such

intense price competition is normal in technology disruptions, and all automakers are scrambling to develop more and better EV models. Electric heat pumps and induction cooktops provide performance superior to gas appliances.

Policies that are more effective and more politically savvy than cap-and-trade include options that accelerate clean energy infrastructure for all households, thus decreasing their energy costs and reducing the billions of dollars sent out of the state to buy fossil fuels annually. An obvious need is clean-energy financing options for all income levels, and the legislature would be wise to consider using the cap-and trade revenues for seeding revolving loan funds or a state green bank.

Policies that increase energy costs parrot the fossil-fuel narrative that transitioning to clean energy will be an expensive sacrifice. That is no longer true—investing in clean energy infrastructure is instead an economic opportunity that will save Washingtonians lots of money, cut toxic emissions and related healthcare costs, generate net jobs, increase state GDP, make the electric grid more efficient, allow better energy resilience, and more.

4. **The next legislature should direct one or more state agencies to develop a comprehensive, long-term energy and emissions plan for the state that achieves the 2030, 2040, and 2050 emission goals.**

Instead of incremental, piecemeal policies like ZEV, LCFS, and CCA, a comprehensive plan for energy and emissions would efficiently implement the most effective policies and define agency charters and accountabilities. No competitive company would dream of implementing a complex change like halving emissions without a detailed, top-down and bottom-up plan with sub-goals and accountabilities defined—and yet that is the case for nearly all states.

Modeling tools: State-level emission planning tools have until recently been offered only as proprietary models from consultancies, but world-class, open-source, non-partisan tools are now available for some states. Energy Innovation's Energy Policy Simulator has been adapted for Oregon; this is online, free, and calculates new scenarios in seconds. Washington state should develop at least one such tool, through Energy Innovation/RMI or other sources.

Insights from the Oregon Energy Policy Simulator are approximately applicable to Washington, since Washington is similar enough to Oregon that insights such as impacts of a carbon tax are pretty relevant. (Oregon and Washington both have about as many vehicles as residents; the per capita energy usage, emissions, and costs are similar; etc.) One of the general insights is that earlier

decarbonization creates more economic benefits in both California and Oregon. Table 1 lists the salient parameters of various Oregon decarbonization scenarios.

Scenario	2030 GHG reduction (% vs 1990)	2050 GHG reduction (% vs 1990)	Savings vs BAU ($B 2050)	Jobs vs BAU (2050)	GDP vs BAU ($B 2050)	MC & HB vs BAU ($B 2050)
Business as usual (BAU)	3	1	0	0	0	0
Recent Policies (no imports)	25	35	2.4	404	0.04	1.57
Recent Policies (all imports)	25	35	2.0	571	0.14	1.57
Climate Protection Plan example	38	55	7.0	9,585	2.46	3.09
US NDC	50	74	10.8	18,027	3.95	4.80

Table 1. Annual results of Oregon EPS policy scenarios relative to BAU: GHG reduction in 2030 and 2050, Change in CapEx + OpEx (Savings), Total Job Creation (Jobs), Gross Domestic Product (GDP), and Monetized Climate and Health Benefits (MC & HB)

A quick sampling of carbon tax options on the Oregon EPS (about 20 minutes) confirms the limited impacts in various sectors (Table 2.) This demonstrates the high inelasticity of fuel prices.

Sector	$20/MTCO2e	$50/MTCO2e	$200/MTCO2e
Transportation	0.2	0.4	1.5
Electricity	0.5	0.7	2.6
Residential buildings	0.1	0.1	0.4
Commercial buildings	0.1	0.2	0.6
Industrial	1.0	2.1	3.5
Total	1.7	3.4	8.4
% of 64.7 MMTCO2e	2.6%	5.3%	13.0%

Table 2. 2030 sectoral reductions (MMTCO2e) due to various carbon tax levels in the Oregon Energy Policy Simulator. (These compare to 64.7 MMTCO2e total GHG emissions in 2020, which is about the same as Washington state per

capita.) These are calculated from a business-as-usual case which does not include the lower electricity emissions due to OR HB 2021; calculated with HB 2021, the electricity emissions impact of $200/MTCO2e is reduced to 1.0 MMTCO2e and the transportation emissions impact is reduced to 1.2 MMTCO2e.

So what policies are necessary to reach 50% reductions by 2030? Assuming a vehicle replacement rate of 6% per year (typical pre-COVID for the US, OR, and WA), a 50% fleet emission reduction implies 100% ZEV sales by about 2025. That is very aggressive, but Norway is demonstrating exactly that. Norway has about the same average income, population, vehicle fleet, and land area as Oregon—and their EV policies are revenue-neutral. Their simple solution is to charge emission fees for the lifetime emissions of a new vehicle—they address the root cause of emissions (emitting infrastructure) instead of the symptom, which is current emissions. The affluent party buying the new vehicle is the party responsible for locking in emissions over the lifetime of the vehicle. Similarly, the buyer of new natural-gas appliances is the party responsible for locking in emissions of a furnace or water heater for the lifetime of the unit.

In his recent book, Electrify, Saul Griffith quantifies the narrow path the US must follow with new infrastructure purchases if it is to achieve the 1.5C guidance of the IPCC. The pathway requires replacements of most of our emitting infrastructure. Like Norway's vehicle policies, all new infrastructure must be zero emission by around 2025. Thus, a much more effective way to price GHG emissions is to price the root cause instead of the symptom (Figure 2).

An even simpler approach is to require a certain percentage of vehicles or appliances sold to be zero-emission. That is the structure of California's ZEV program, but the goals are too low to impact anything now—instead of about 8% EV sales by 2025, the target needs to be closer to 100%. (I believe that global EV % of sales will reach 90% by around 2030 with existing policies and market forces.) Thus, Ecology should lobby CARB to propose much higher ZEV targets. Alternatively, the state can probably avoid the federal preemption on states defining vehicle emissions or fuel efficiency by simply requiring electric vehicles to improve the state's electric grid.

How to price carbon?

- It's too late for incremental policies
- We must install new infrastructure

	Fee and dividend	Revenue-neutral tax	Tax and invest	Cap & invest	Lifetime emission fee
What is taxed?	Fuel sectors ~$20/ton	Fuel sectors ~$20/ton	Fuel sectors ~$20/ton	Fuel sectors ~$20/ton	New infrastructure ~$100/ton
Stable price?	YES (too low)	YES (too low)	YES (too low)	NO (& too low)	YES
How is revenue spent?	Give it back	Offset other taxes	Invest in projects	Invest in projects	Doesn't matter
Does it steer spending?	NO	NO	Only the revenue spent	Only the revenue spent	YES
Does it work?	Untested	NO (BC)	Untested (i1631)	Inefficient (CA, RGGI)	YES (Norway)

Figure 2. Pricing current carbon emissions mainly punishes parties for fueling the infrastructure they own. Pricing future emissions steers infrastructure purchases to zero emissions.

5. Recommendations for emissions from EITE industries depend on the type of industry.

Refinery emissions will decrease with end-user demand, assuming new, effective policies are added. Emissions from cement manufacture, semiconductor fabrication, aviation, deep-sea shipping, steel production, and various other industrial processes are R&D projects at this time. Washington should provide R&D tax credits, matching grants, or other support for such R&D projects.

****

Overall, I am dismayed that we're still wasting precious time on creating another complex cap-and-trade system. We have only 8 years to cut emissions in half, and better policy solutions have been proven. If I were a state legislator, I would

advocate for repealing the Climate Commitment Act and pursuing other policies that are less divisive and far more effective.

Thank you for all your efforts, but I think the legislature needs to give Ecology better options and guidance.

I hope these comments are useful.

Eric Strid
White Salmon, WA

Co-founder and retired CEO, Cascade Microtech, Beaverton, Oregon
Director, Power Oregon
Director, npArbor
Hood River County Energy Council
Columbia Gorge Climate Action Network
Advisory Boards: The Green Energy Institute at Lewis and Clark College; Food and Water Watch